



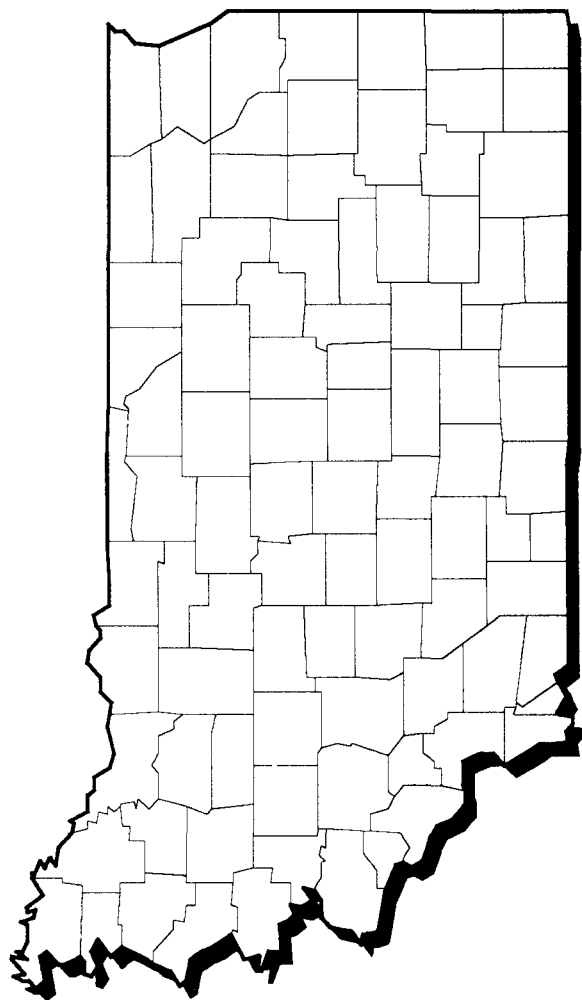
United States
Environmental Protection
Agency

Solid Waste And
Emergency Response
(5102 G)

EPA/540/R-93/013
December 1992
PB93-963214

SUPERFUND:

**Progress at
National
Priority
List Sites**



INDIANA 1992 UPDATE



Printed on Recycled Paper

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Indiana

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Office of Program Management
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The complete set of the 49 State reports may be ordered as PB93-963250.

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INTRODUCTION

A BRIEF OVERVIEW OF SUPERFUND

During the second half of the Twentieth Century, the environmental consequences of more than 100 years of industrialization in the United States became increasingly clear. Authors such as Rachel Carson wrote passionately about the often-hidden environmental effects of our modern society's widespread use of chemicals and other hazardous materials. Their audience was small at first, but gradually their message spread. Growing concern turned to action, as people learned more about the environment and began to act on their knowledge

The 1970s saw environmental issues burst onto the national scene and take hold in the national consciousness. The first Earth Day was observed in 1970, the year that the U.S. Environmental Protection Agency (EPA) was founded. By the end of the 1970s, Love Canal in New York and the Valley of the Drums in



Kentucky had entered the popular lexicon as synonyms for pollution and environmental degradation.

Superfund Is Established

The industrialization that gave Americans the world's highest standard of living also created problems that only a national program could address. By 1980, the U.S. Congress had passed numerous environmental laws, implemented by the EPA, but many serious hazardous waste problems were slipping through the cracks.

Responding to growing concern about public health and environmental threats from uncontrolled releases of hazardous materials, the U.S. Congress passed the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Popularly known as Superfund, CERCLA had one seemingly simple job—to uncover and clean up hazardous materials spills and contaminated sites.

A Big Job

Few in Congress, the EPA, the environmental community, or the general public knew in 1980 just how big the nation's hazardous materials problem is. Almost everyone thought that Superfund would be a short-lived program requiring relatively few resources to clean up at most a few hundred sites. They were quite mistaken.

As the EPA set to work finding sites and gauging their potential to harm people and the environment, the number of sites grew. Each discovery seemed to lead to another, and today almost 36,000 hazardous waste sites have been investigated as potential hazardous waste sites. They are catalogued in the EPA's computerized database, CERCLIS (for the Comprehensive Environmental Re-

INTRODUCTION

sponse, Compensation, and Liability Information System).

The damage to public health and the environment that each site in CERCLIS might cause is evaluated; many sites have been referred to State and local governments for cleanup. The EPA lists the nation's most serious hazardous waste sites on the National Priorities List, or NPL. (These Superfund sites are eligible for federally-funded cleanup, but whenever possible the EPA makes polluters pay for the contamination they helped create.) The NPL now numbers 1,275 sites, with 50 to 100 added each year. By the end of the century, the NPL may reach as many as 2,100 sites.

Superfund faces some of the most complex pollution problems ever encountered by an environmental program. Improperly stored or disposed chemicals and the soil they contaminate are one concern. More difficult to correct are the wetlands and bays, and the groundwater, lakes, and rivers often used for drinking water that are contaminated by chemicals spreading through the soil or mixing with

storm water runoff. Toxic vapors contaminate the air at some sites, threatening the health of people living and working near by.

Superfund aims to control immediate public health and environmental threats by tackling the worst problems at the worst sites first. Wherever possible, Superfund officials use innovative treatment techniques—many developed or refined by the EPA—to correct hazardous materials problems once and for all. Many of the treatment techniques they use did not exist when the program was created.

The EPA Administrator had challenged Superfund to complete construction necessary for cleanup work at 130 NPL sites by the end of the 1992 federal fiscal year. By September 30, 1992, the end of fiscal year 1992, construction had been completed at a total of 149 NPL sites. Superfund is well on its way of meeting the Administrator's goal of completing construction at 200 NPL sites by the end of fiscal year 1993, and 650 sites by the end of fiscal year 2000.

Quick Cleanup at Non-NPL Sites

Long-standing hazardous waste sites are not Superfund's only concern. The EPA also responds to hazardous spills and other emergencies, hauling away chemicals for proper treatment or disposal. Superfund teams perform or supervise responses at rail and motor vehicle accidents, fires, and other emergencies involving hazardous substances. They also evacuate people living and working near by, if necessary, and provide clean drinking water to people whose own water is contaminated. Removal crews also post warning signs and take other precautions to keep people and animals away from hazardous substances.



Superfund employee prepares equipment for groundwater treatment.

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Quick Cleanups, or Removals, are not limited to emergencies. When cleanup crews at contaminated sites find hazardous substances that immediately threaten people or the environment, they act right away to reduce the threat or to remove the chemicals outright. As the EPA implements the Superfund Accelerated Cleanup Model (SACM), more and more sites will undergo quick cleanups, and many of these will be cleaned up completely without ever being included on the NPL. (See "Streamlining Superfund: The Superfund Accelerated Cleanup Model.")

Some of Superfund's most significant gains in public health and environmental protection have been won by the removal program. As of March 31, 1992, the Emergency Response



Superfund employee removing drums from a Superfund site.

Program had logged more than 2,300 removal completions since Superfund was established.

The Public's Role

Superfund is unique among federal programs in its commitment to citizen participation. Although the EPA is responsible for determining how dangerous a site is and how best to clean it up, the Agency relies on citizen input as it makes these decisions.

Community residents are often invaluable sources of information about a hazardous waste site, its current and previous owners, and the activities that took place there. Such information can be crucial to experts evaluating a site and its potential dangers.

Residents also comment on EPA cleanup plans by stating their concerns and preferences at public meetings and other forums and in formal, written comments to Agency proposals. The EPA takes these comments and concerns seriously, and has modified many proposals in response to local concerns. For, ultimately, it is the community and its citizens that will live with the results of the EPA's decisions and actions; it is only fair that citizens participate in the process.

A Commitment to Communication

The Superfund program is very serious about public outreach and communication. Community relations coordinators are assigned to each NPL site to help the public understand the potential hazards present, as well as the cleanup alternatives. Local information repositories, such as libraries or other public buildings, have been established near each NPL site to ensure that the public has an opportunity to review all relevant information and the proposed cleanup plans.

The individual State volumes contain summary fact sheets on NPL sites in each State and territory. Together, the fact sheets provide a concise report on site conditions and the progress made toward site cleanups as of March 1992. The EPA revises these volumes periodically to provide an up-to-date record of program activities. A glossary of key terms relating to hazardous waste management and Superfund site cleanup is provided at the back of this book.

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Superfund is, of course, a public program, and as such it belongs to everyone of us. This volume, along with other State volumes, comprises the EPA's report on Superfund progress to the program's owners for the year 1992.

STREAMLINING SUPERFUND: THE SUPERFUND ACCELERATED CLEANUP MODEL

Historically, critics and supporters alike have measured Superfund's progress by the number of hazardous waste sites deleted from the NPL. Although easy enough to tally, this approach is too narrow. It misses the major gains Superfund makes by reducing major risks at the nation's worst hazardous sites long before all clean-up work is done and the site deleted. It also ignores the Removal Program's contributions to meeting Superfund's twin mandates of maximizing public health and environmental protection.

Renewing Superfund's commitment to rapid protection from hazardous materials, the EPA is streamlining the program. The Superfund Accelerated Cleanup Model, or SACM, will take Early Actions, such as removing hazardous wastes or contaminated materials, while experts study the site. SACM also will combine similar site studies to reduce the time required to evaluate a site and its threats to people and the environment. This way, immediate public health and environmental threats will be addressed while long-term cleanups are being planned.

Emergencies such as train derailments and motor vehicle accidents will continue to be handled expeditiously. Teams of highly trained technicians will swing into action right away, coordinating the cleanup and removal of hazardous substances to ensure public safety as quickly as possible.

Breaking With Tradition

The traditional Superfund process begins with a lengthy phase of study and site assessment, but SACM will save time by combining separate, yet similar, activities. Each EPA Region will form a Decision Team of site managers,

risk assessors, community relations coordinators, lawyers, and other experts to monitor the studies and quickly determine whether a site requires Early Action (taking less than five years), Long-term Action, or both.

While the site studies continue, the Decision Team will begin the short-term work required to correct immediate public health or environmental threats from the site. Besides removing hazardous materials, Early Actions include taking precautions to keep contaminants from moving off the site and restricting access to the site. Early Actions could eliminate most human risk from these sites, and Superfund will further focus its public participation and public information activities on site assessment and Early Action.

Long-Term Solutions

While Early Actions can correct many hazardous waste problems—and provide the bulk of public health and environmental protection—some contamination will take longer to correct. Cleanups of mining sites, wetlands, estuaries, and projects involving incineration of contaminants or restoration of groundwater can take far longer than the three to five years envisioned for Early Actions. Under SACM, these sites will be handled much as they are now.

Also under SACM, the EPA will continue its pursuit of potentially responsible parties who may have caused or contributed to site contamination. Expedited enforcement and procedures for negotiating potentially responsible party settlements will secure their participation. Superfund personnel will continue to oversee clean-up work performed by potentially responsible parties.

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HOW SUPERFUND WORKS

Each Superfund site presents a different set of complex problems. The same hazardous materials and chemicals often contaminate many sites, but the details of each site are different. Almost always, soil is contaminated with one or more chemicals. Their vapors may taint the air over and around the site. Contaminants may travel through the soil and reach underground aquifers which may be used for drinking water, or they may spread over the site to contaminate streams, ponds, and wetlands. The contaminating chemicals may interact with each other, presenting even more complicated cleanup problems.

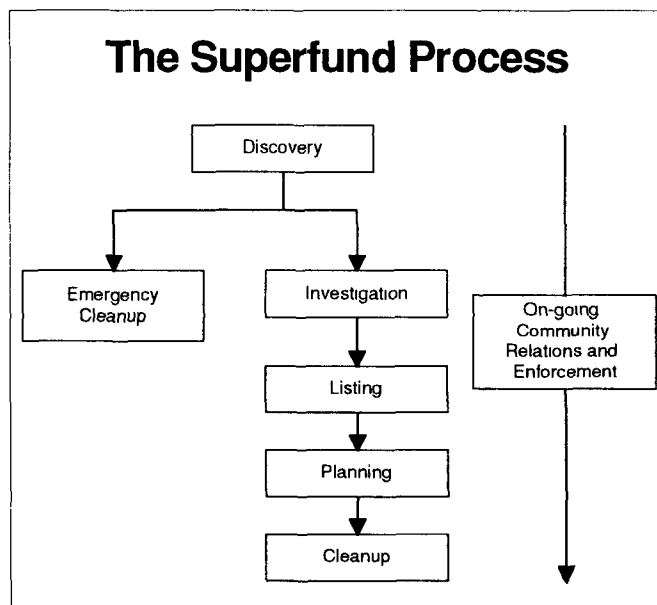
Superfund's cleanup process is arduous and exacting. It requires the best efforts of hundreds of experts in science and engineering, public health, administration and management, law, and many other fields.

The average NPL site takes from seven to ten years to work its way through the system, from discovery to the start of long-term cleanup. Actual cleanup work can take years, decades if contaminated groundwater must be treated. Of course, imminent threats to public health or the environment are corrected right away.

The diagram to the right presents a simplified view of the cleanup process. The major steps in the Superfund process are:

- Site discovery and investigation to identify contaminants and determine whether emergency action is required;
- Emergency site work such as removing contaminants for proper treatment or disposal, and securing the site to keep people and animals away, if warranted by conditions at the site;
- Site evaluation to determine how people living and working nearby, and the environment, may be exposed to site contaminants;

- Detailed studies to determine whether conditions are serious enough to add the site to the National Priorities List of sites eligible for federally funded cleanup under Superfund;
- Selection, design, and implementation of a cleanup plan, after a thorough review of the most effective cleanup options, given site conditions, contaminants present, and their potential threat to public health or the environment.
- Follow-up to ensure that the cleanup work done at the site continues to be effective over the long term.



From the earliest stages, EPA investigators work hard to identify those responsible for the contamination. As their responsibility is established, the EPA negotiates with these “responsible parties” to pay for cleaning up the problem they helped create. This “enforcement first” policy saves Superfund Trust Fund monies for use in cleanups where the responsible parties cannot be identified, or where they are unable to fund cleanup work.

THE VOLUME

How to Use the State Book

The site fact sheets presented in this book are comprehensive summaries that cover a broad range of information. The fact sheets describe hazardous waste sites on the NPL and their locations, as well as the conditions leading to their listing ("Site Description"). The summaries list the types of contaminants that have been discovered and related threats to public and ecological health ("Threats and Contaminants"). "Cleanup Approach" presents an overview of the cleanup activities completed, underway, or planned. The fact sheets conclude with a brief synopsis of how much progress has been made in protecting public health and the environment. The summaries also pinpoint other actions, such as

legal efforts to involve polluters responsible for site contamination and community concerns.

The fact sheets are arranged in alphabetical order by site name. Because site cleanup is a dynamic and gradual process, all site information is accurate as of the date shown on the bottom of each page. Progress always is being made at NPL sites, and the EPA periodically will update the site fact sheets to reflect recent actions and will publish updated State volumes. The following two pages show a generic fact sheet and briefly describe the information under each section.

How Can You Use This State Book?

You can use this book to keep informed about the sites that concern you, particularly ones close to home. The EPA is committed to involving the public in the decision making process associated with hazardous waste cleanup. The Agency solicits input from area residents in communities affected by Superfund sites. Citizens are likely to be affected not only by hazardous site conditions, but also by the remedies that combat them. Site cleanups take many forms and can affect communities in different ways. Local traffic may be rerouted, residents may be relocated, temporary water supplies may be necessary.

Definitive information on a site can help citizens sift through alternatives and make decisions. To make good choices, you must know what the threats are and how the EPA

intends to clean up the site. You must understand the cleanup alternatives being proposed for site cleanup and how residents may be affected by each one. You also need to have some idea of how your community intends to use the site in the future, and you need to know what the community can realistically expect once the cleanup is complete.

The EPA wants to develop cleanup methods that meet community needs, but the Agency only can take local concerns into account if it understands what they are. Information must travel both ways in order for cleanups to be effective and satisfactory. Please take this opportunity to learn more, become involved, and assure that hazardous waste cleanup at "your" site considers your community's concerns.

A**SITE DESCRIPTION**

This section describes the location and history of the site. It includes descriptions of the most recent activities and past actions at the site that have contributed to the contamination. Population estimates, land usages, and nearby resources give readers background on the local setting surrounding the site.

B**THREATS AND CONTAMINANTS**

The major chemical categories of site contamination are noted, as well as which environmental resources are affected. Icons representing each of the affected resources (may include air, groundwater, surface water, soil, and contamination to environmentally sensitive areas) are included in the margins of this section. Potential threats to residents and the surrounding environments arising from the site contamination also are described.

C**CLEANUP APPROACH**

This section contains a brief overview of how the site is being cleaned up.

D**RESPONSE ACTION STATUS**

Specific actions that have been accomplished or will be undertaken to clean up the site are described here. Cleanup activities at NPL sites are divided into separate phases, depending on the complexity and required actions at the site. Two major types of cleanup activities often are described: initial, immediate, or emergency actions to quickly remove or reduce imminent threats to the community and surrounding areas; and long-term remedial phases directed at final cleanup at the site. Each stage of the cleanup strategy is presented in this section of the summary. Icons representing the stage of the cleanup process (initial actions, site investigations, EPA selection of the cleanup remedy, engineering design phase, cleanup activities underway, and completed cleanup) are located in the margin next to each activity description.

E**SITE FACTS**

Additional information on activities and events at the site are included in this section. Often details on legal or administrative actions taken by the EPA to achieve site cleanup or other facts pertaining to community involvement with the site cleanup process are reported here.

THE VOLUME

The “icons,” or symbols, accompanying the text allow the reader to see at a glance which environmental resources are affected and the status of cleanup activities at the site.

Icons in the Threats and Contaminants Section



Contaminated *Groundwater* resources in the vicinity or underlying the site. (Groundwater is often used as a drinking water source.)



Contaminated *Surface Water and Sediments* on or near the site. (These include lakes, ponds, streams, and rivers.)



Contaminated *Air* in the vicinity of the site. (Air pollution usually is periodic and involves contaminated dust particles or hazardous gas emissions.)



Contaminated *Soil and Sludges* on or near the site. (This contamination category may include bulk or other surface hazardous wastes found on the site.)



Threatened or contaminated *Environmentally Sensitive Areas* in the vicinity of the site. (Examples include wetlands and coastal areas or critical habitats.)

Icons in the Response Action Status Section



Initial, Immediate, or Emergency Actions have been taken or are underway to eliminate immediate threats at the site.



Site Studies at the site to determine the nature and extent of contamination are planned or underway.



Remedy Selected indicates that site investigations have been concluded, and the EPA has selected a final cleanup remedy for the site or part of the site.



Remedy Design means that engineers are preparing specifications and drawings for the selected cleanup technologies.



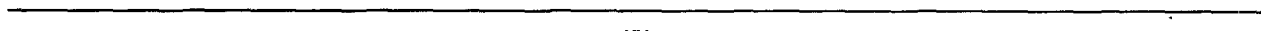
Cleanup Ongoing indicates that the selected cleanup remedies for the contaminated site, or part of the site, currently are underway.

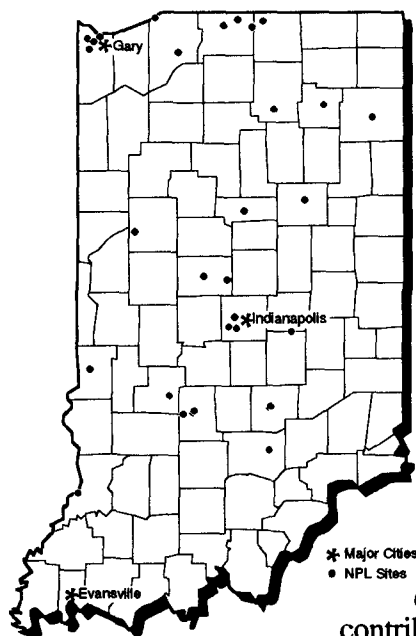


Cleanup Complete shows that all cleanup goals have been achieved for the contaminated site or part of the site.



A SUMMARY OF THE STATE PROGRAM





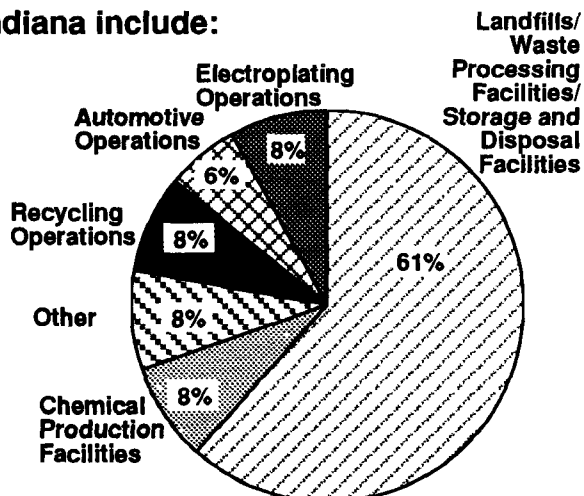
Superfund Activities in Indiana

The State of Indiana is located within EPA Region 5, which includes the six midwestern States. The State covers 36,185 square miles. According to the 1990 Census, Indiana experienced a 1 percent increase in population between 1980 and 1990, and is ranked fourteenth in U.S. population with approximately 5,544,000 residents.

The Indiana Hazardous Waste Act of 1980, the Environmental Management Act and the Hazardous Waste Land Disposal Tax Act of 1981 combine to authorize site cleanup activities in the State of Indiana. The statutes grant the State the authority to compel polluters who are liable for site contamination to conduct or pay for cleanup activities, regardless of fault or the amount of contributing pollution. The State also has the authority to issue orders for information and site access, collect civil and criminal penalties and damages, and recover costs for State action. Under the Indiana Responsible Transfer Law, any environmental risks posed at a property must be disclosed prior to real estate transfer. In addition to the 10 percent contribution from the State required by the Federal Superfund program, the Hazardous Substances Response Trust Fund may be used for investigations, study and design activities, emergency actions and removals, long-term cleanup actions, operation and maintenance activities, actions at non-petroleum Leaking Underground Storage Tank sites, and pre-authorized mixed funding claims. A 1991 amendment authorized use of the Fund to address sites contaminated with petroleum. The State public participation policy is to provide a 30-day comment period prior to final cleanup decisions. In practice, public meetings are held several times during the site investigation, followed by availability sessions in the affected communities. Currently, 32 sites in the State of Indiana have been listed as final on the NPL; three sites have been deleted. One new site was proposed for listing in 1992.

The Department of Environmental Management implements the Superfund Program in the State of Indiana

Activities responsible for hazardous waste contamination in the State of Indiana include:



Facts about the 36 NPL sites in Indiana:



Immediate Actions (such as removing hazardous substances or restricting site access) were performed at 25 sites.



Eleven sites endanger sensitive environments.

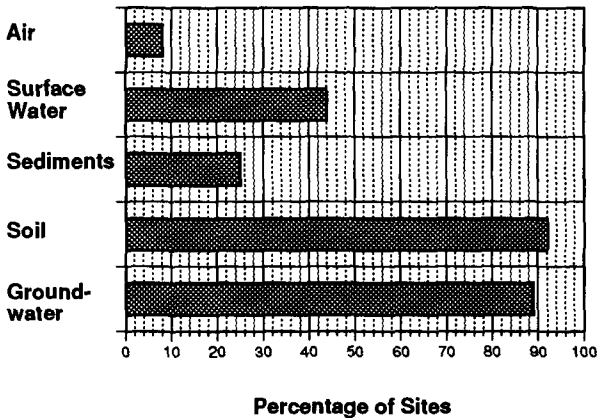


Thirty-two sites are located near residential areas.

INDIANA

Most Sites Have Multiple Contaminants and Contaminated Media:

Media Contaminated at Sites



Contaminants Found at Sites

Percentage of Sites	
VOCs	69%
Heavy Metals	58%
PCBs	47%
Creosotes	28%
Plastics	19%
Pesticides/Herbicides	17%
Other*	14%
Asbestos	8%
Cyanide	8%
Petrochemicals/Explosives	6%
Acids	6%
Dioxin	3%

*Other contaminants include ammonia, chloroform, cyanide, furans, potassium, chloride, and sodium.

The Potentially Responsible Party Pays...

In the State of Indiana, potentially responsible parties are paying for or conducting cleanup activities at 26 sites.

For Further Information on NPL Sites and Hazardous Waste Programs in the State of Indiana Please Contact:

☎ EPA Region 5 Office of Public Affairs	For information concerning community involvement	(312) 353-2072
☎ National Response Center	To report a hazardous waste emergency	(800) 424-8802
☎ Department of Environmental Management: Office of Environmental Response, Project Management Branch	For information about the State's responsibility in the Superfund Program	(317) 243-5052
☎ EPA Region 5 Waste Management Division	For information about the Regional Superfund Program	(312) 353-9419
☎ EPA Superfund Hotline	For information about the Federal Superfund Program	(800) 424-9068

THE NPL REPORT

PROGRESS TO DATE

The following Progress Report lists all sites currently on, or deleted from, the NPL and briefly summarizes the status of activities for each site at the time this report was prepared. The steps in the Superfund cleanup process are arrayed across the top of the chart, and each site's progress through these steps is represented by an arrow (⇒) indicating the current stage of cleanup.

Large and complex sites often are organized into several cleanup stages. For example, separate cleanup efforts may be required to address the source of the contamination, hazardous substances in the groundwater, and surface water pollution, or to clean up different areas of a large site. In such cases, the chart portrays cleanup progress at the site's *most advanced* stage, reflecting the status of site activities rather than administrative accomplishments.

- ⇒ An arrow in the "Initial Response" category indicates that an emergency cleanup, immediate action, or initial action has been completed or currently is underway. Emergency or initial actions are taken as an interim measure to provide immediate relief from exposure to hazardous site conditions or to stabilize a site to prevent further contamination.
- ⇒ A final arrow in the "Site Studies" category indicates that an investigation to determine the nature and extent of the contamination at the site currently is ongoing or planned.
- ⇒ A final arrow in the "Remedy Selection" category means that the EPA has selected the final cleanup strategy for the site. At the few sites where the EPA has

determined that initial response actions have eliminated site contamination, or that any remaining contamination will be naturally dispersed without further cleanup activities, a "No Action" remedy has been selected. In these cases, the arrows are discontinued at the "Remedy Selection" step and resume in the "Construction Complete" category.

- ⇒ A final arrow at the "Remedial Design" stage indicates that engineers currently are designing the technical specifications for the selected cleanup remedies and technologies.
- ⇒ A final arrow in the "Cleanup Ongoing" column means that final cleanup actions have been started at the site and currently are underway.
- ⇒ A final arrow in the "Construction Complete" category is used only when all phases of the site cleanup plan have been performed, and the EPA has determined that no additional construction actions are required at the site. Some sites in this category currently may be undergoing long-term operation and maintenance or monitoring to ensure that the cleanup actions continue to protect human health and the environment.
- ✓ A check in the "Deleted" category indicates that the site cleanup has met all human health and environmental goals and that the EPA has deleted the site from the NPL.

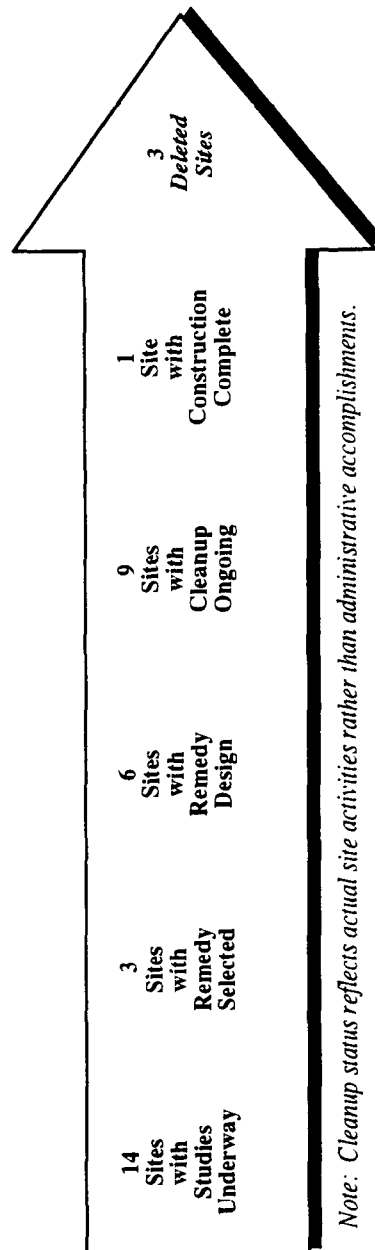
Further information on the activities and progress at each site is given in the site "Fact Sheets" published in this volume.

Progress Toward Cleanup at NPL Sites in the State of Indiana

Site Name	County	NPL	Date	Initial Response	Site Studies	Remedy Selected	Remedy Design	Cleanup Ongoing	Construction Complete	Deleted
AMERICAN CHEMICAL SERVICE, INC.	LAKE	Final	09/21/84	⇨	⇨					
BENNETT STONE QUARRY	MONROE	Final	09/21/84	⇨	⇨	⇨	⇨	⇨		
CARTER LEE LUMBER COMPANY	MARION	Final	03/31/89		⇨					
COLUMBUS OLD MUNICIPAL LDFL #1	BARTHOLOMEW	Final	06/10/86		⇨	⇨				
CONRAIL RAIL YARD (ELKHART)	ELKHART	Final	08/30/90	⇨	⇨					
CONTINENTAL STEEL CORPORATION	HOWARD	Final	03/31/89	⇨	⇨					
DOUGLAS ROAD/UNIROYAL, INC. LDFL	ST. JOSEPH	Final	03/31/89		⇨					
ENVIROCHEM CORPORATION	BOONE	Final	09/08/83	⇨	⇨	⇨	⇨			
FISHER-CALO	LA PORTE	Final	09/08/83	⇨	⇨	⇨	⇨			
FORT WAYNE REDUCTION DUMP	ALLEN	Final	06/10/86		⇨	⇨	⇨	⇨		
GALEN MEYERS DUMP/DRUM SALVAGE	ST. JOSEPH	Final	03/31/89	⇨	⇨					
HIMCO DUMP	ELKHART	Final	02/21/90	⇨	⇨					
IMC (TERRE HAUTE EAST PLANT)	VIGO	Deleted	02/11/91	⇨	⇨	⇨			⇨	✓
LAKE SANDY JO (M & M LANDFILL)	LAKE	Final	09/08/83	⇨	⇨	⇨	⇨	⇨		
LAKELAND DISPOSAL SERVICE INC.	KOSCIUSKO	Final	03/31/89		⇨					
LEMON LANE LANDFILL	MONROE	Final	09/08/83	⇨	⇨	⇨	⇨	⇨		
MAIN STREET WELL FIELD	ELKHART	Final	09/08/83	⇨	⇨	⇨	⇨	⇨		
MARION (BRAGG) DUMP	GRANT	Final	09/08/83		⇨	⇨	⇨	⇨		
MIDCO I	LAKE	Final	09/08/83	⇨	⇨	⇨	⇨	⇨		
MIDCO II	LAKE	Final	06/10/86	⇨	⇨	⇨	⇨	⇨		
NEAL'S DUMP (SPENCER)	OWEN	Final	06/10/86	⇨	⇨	⇨	⇨	⇨		
NEAL'S LANDFILL (BLOOMINGTON)	MONROE	Final	09/08/83	⇨	⇨	⇨	⇨	⇨		
NINTH AVENUE DUMP	LAKE	Final	09/08/83	⇨	⇨	⇨	⇨	⇨		
NORTHSIDE SANITARY LANDFILL, INC.	BOONE	Final	09/21/84		⇨	⇨	⇨	⇨		
POER FARM	HANCOCK	Deleted	02/11/91	⇨	⇨	⇨			⇨	✓
PRESTOLITE BATTERY DIVISION	KNOX	Final	10/04/89	⇨	⇨					
REILLY TAR & CHEMICAL CORP.	MARION	Final	09/21/84		⇨					

Progress Toward Cleanup at NPL Sites in the State of Indiana (Continued)

Site Name	County	NPL	Date	Initial Response	Site Studies	Remedy Selected	Remedy Design	Cleanup Ongoing	Construction Complete	Deleted
SEYMOUR RECYCLING CORPORATION	JACKSON	Final	09/08/83	⇨	⇨	⇨	⇨	⇨		
SOUTHSIDE SANITARY LANDFILL	MARION	Final	03/31/89	⇨	⇨					
TIPPECANOE SANITARY LANDFILL	TIPPECANOE	Final	08/30/90		⇨					
TRI-STATE PLATING	BARTHOLOMEW	Final	06/10/86	⇨	⇨	⇨	⇨	⇨	⇨	
US SMELTER AND LEAD REFINERY, INC	LAKE	Proposed	02/07/92		⇨					
WASTE, INC. LANDFILL	LA PORTE	Final	07/21/87		⇨					
WAYNE WASTE OIL	WHITLEY	Final	09/08/83	⇨	⇨	⇨				
WEDZEB ENTERPRISES, INC.	BOONE	Deleted	09/10/91	⇨	⇨	⇨	⇨	⇨	⇨	✓
WHITEFORD SALES & SERVICE	ST. JOSEPH	Final	08/30/90	⇨	⇨					



Note: Cleanup status reflects actual site activities rather than administrative accomplishments.

AMERICAN CHEMICAL SERVICE, INC. INDIANA

EPA ID# IND016360265



EPA REGION 5

Lake County
Griffith

Site Description

American Chemical Service (ACS), Inc. recycled chemicals on 21 acres along South Colfax Avenue in Griffith from 1958 until 1975, when it voluntarily stopped using two disposal areas on site and covered them. The site contains an estimated 35,000 buried drums, and pigment and resin sludges. The site operated until 1990 as a hazardous waste recycler with interim status under the Resource Conservation and Recovery Act (RCRA). The site previously contained three different operations: the American Chemical Service, Kapica Drum, and the Griffith Sanitary Landfill. ACS began operation in 1955 as a solvent recovery firm and later began a chemical manufacturing operation. From 1955 until at least 1975, ACS disposed of a variety of hazardous wastes produced during company operations in an area known as the off-site containment area on the property. ACS also disposed of numerous drums and stillbottoms in portions of the currently operating facility. Some waste was accepted from outside sources for incineration in an on-site incinerator, and the ash was disposed of on ACS property. In 1972, the Indiana State Board of Health (ISBH) responded to residents' complaints and inspected the ACS facility. From 1972 to 1973, ISBH attempted to achieve improved waste handling, spill prevention measures, and site maintenance. In 1974 and 1975, ISBH also responded to reports that ACS was discharging chemicals to the sanitary sewer and dumping chemicals on site. Approximately 10,000 people live within 3 miles of the site, the closest being less than 1/4 mile away. Located in the immediate vicinity of the site are a few residences, railroad tracks, drainage ditches, and marshy areas. More than 2,000 private wells are in use in the area of the site.

Site Responsibility: This site is being addressed through Federal and potentially responsible parties' actions.

NPL LISTING HISTORY

Proposed Date: 09/08/83

Final Date: 09/21/84

Threats and Contaminants



The groundwater is contaminated with volatile organic compounds (VOCs) including benzene, toluene, chloroethane, xylene, vinyl chloride, the creosote pentachlorophenol (PCP), and phthalates. The shallow aquifer contains the highest amounts of organic contaminants. Soils are heavily contaminated with numerous substances including polychlorinated biphenyls (PCBs), heavy metals, semi- and non-volatiles, coal tar constituents, VOCs, and some pesticides. Evidence suggests that the heavily contaminated shallow aquifer discharges to the wetlands and surface water, posing the potential for adverse effects. Past discharges by ACS had affected a major portion of the site's wetlands. Exposure to contaminants by accidentally ingesting groundwater and surface water; coming in direct contact with groundwater, surface water, soil, or sediments; or inhaling airborne VOCs could be potential health threats.

Cleanup Approach

The site is being addressed in two stages: initial actions and a long-term remedial phase focusing on cleanup of the entire site.

Response Action Status



Initial Actions: In the early 1980s, ACS installed a clay wall to block the perceived flow direction of the groundwater and to control the environmental degradation due to surface water and leachate runoff. Initial cleanup efforts concentrated on identifying, staging, and segregating drums from construction debris in the building. Drums were labeled, sampled, overpacked, and staged in a nearby vacant building. Twenty-four-hour security was maintained throughout the removal. Construction debris was decontaminated and disposed of. The remaining building brick was scrubbed with a high pressure wash. All rinse and decontamination water was collected and removed for treatment and disposal. Drums were grouped into three separate waste streams based on pH levels. All three waste streams were accepted at a facility for treatment and disposal. A total of 277 drums of waste and 23,154 gallons of water were shipped off site for treatment and disposal.



Entire Site: Approximately 150 potentially responsible parties have formed a group to conduct a study of site contamination. The investigation involves wetlands delineation; waste and soil borings; and groundwater, surface water, and sediment sampling to determine the nature and extent of site contamination. The scheduled completion date for the investigation is in late 1992, when the EPA will select the remedies to clean up the site.

Environmental Progress



The early removal of drums and contaminated water and the installation of the clay barrier wall have reduced the potential for exposure to hazardous materials on the American Chemical Service, Inc. site while an investigation of the site contamination is underway and the final remedies are being planned.

Site Repository



Griffith Public Library, 940 North Broad Street, Griffith, IN 46319

BENNETT STONE QUARRY INDIANA

EPA ID# IND006418651



EPA REGION 5

Monroe County
Bloomington

Site Description

The Bennett Stone Quarry site consists of 2 1/2 acres and is located approximately 1 mile northwest of Bloomington. This limestone quarry was used as a dump for old electrical parts for approximately 20 years, before it was discovered by the Monroe County Health Department (MCHD) in 1983. The MCHD subsequently defined an area of several acres that had been used for dumping electrical parts, including a large number of capacitors contaminated with polychlorinated biphenyls (PCBs). Labels found on the capacitors during the MCHD investigation linked contamination to the Westinghouse Corporation. Soils adjacent to the site are stained with oil, and the entire site is devoid of vegetation. Two ponds that drain into Stout Creek are located on the western end of the site and are coated with oily sheens. Five other PCB-contaminated sites are located in the Bloomington area, three of which are listed as separate sites on the NPL: Neal's Landfill, Neal's Dump, and Lemon Lane Landfill. Anderson Road, an authorized landfill, and Winston-Thomas Treatment Plant, an inactive City-owned wastewater treatment plant, are the other sites. The majority of the residents living near Bennett Stone Quarry and the adjoining property depend on private wells for their water supply. The land along Stout Creek is used for raising dairy and beef cattle. The quarries adjacent to the site are frequented by local residents and campers for recreational activities.

Site Responsibility: This site is being addressed through Federal and potentially responsible parties' actions.

NPL LISTING HISTORY

Proposed Date: 09/08/83

Final Date: 09/21/84

Threats and Contaminants



On-site groundwater, soils, sediments, and surface water were contaminated with PCBs. Off-site sediments located in Stout Creek also were contaminated with PCBs. Smaller amounts of PCBs were found in the waters of Stout Creek. Area residents could have been exposed to contaminants through direct contact with PCB-laden oil in the ponds and on-site PCB-contaminated soil. Should site-related contaminants enter Stout Creek, area residents could be at risk when drinking or coming in direct contact with contaminated surface water or sediments.

Cleanup Approach

The site is being addressed in two stages: emergency actions and a long-term remedial phase directed at cleanup of the entire site.

Response Action Status



Emergency Actions: The EPA undertook an emergency cleanup in 1983 that included: removing and disposing of capacitors on the surface and contaminated soils; conducting an aerial photographic survey, a geophysical study, and soil sampling; placing an impervious cover over the site to prevent runoff of contaminants; and constructing security fencing around the site. In 1987, contaminated sediments were excavated from Stout Creek.



Entire Site: Activities conducted to address contamination at the site included: excavating all refuse plus a 2-foot buffer zone around the known refuse; incinerating excavated materials in an approved facility; hydro-vacuuming contaminated sediments from the on-site ponds and Stout Creek and storing them off site until incineration and disposal can be conducted; and regrading, covering, and revegetating the area of the site. Groundwater and surface water monitoring will be continued to ensure that water quality standards are maintained.

Site Facts: In 1985, the Westinghouse Corporation and the EPA signed a Consent Decree, under which Westinghouse agreed to perform the site cleanup.

Environmental Progress



The excavation, removal, or incineration of hazardous materials and contaminated creek sediments, installation of a security fence, and other cleanup activities have reduced the potential for exposure to contamination at the Bennett Stone Quarry site. Continuing groundwater and surface water monitoring will provide protection to nearby residents and the environment.

Site Repository



Not established.

CARTER LEE LUMBER COMPANY INDIANA

EPA ID# IND016395899



EPA REGION 5

Marion County
Indianapolis

Site Description

Carter Lee Lumber Company has been selling lumber products at this 2-acre site since 1873. In 1971, Carter Lee bought land behind its original property from the Cleveland, Cincinnati, Chicago, and St. Louis Railway Corporation. Liquid wastes from tank trucks and railroad cars reportedly were dumped onto the ground and into a trench on the property. The EPA sampled the soil in 1985 and found it to be contaminated with heavy metals and polynuclear aromatic hydrocarbons (PNAs). The trench has been filled with clay and the property has been fenced, with access limited to employees of the lumber company. Approximately 710,000 people obtain drinking water from municipal wells within 3 miles of the site. These wells are supplied by surface water. The closest private drinking water well is upgradient from the property and approximately 3,500 feet away. The property is in the flood plain of the White River, which is located 1,500 feet from the site.

Site Responsibility: This site is being addressed through Federal, State, and potentially responsible parties' actions.

NPL LISTING HISTORY

Proposed Date: 06/24/88

Final Date: 03/31/89

Threats and Contaminants



Soil is contaminated with heavy metals including arsenic, cadmium, chromium, and copper; as well as cyanide and various volatile organic compounds (VOCs). Presently, there is little threat to human health or the environment. The site is fenced; however, employees of the lumber company are coming into contact with contaminated soil, as well as cleanup workers who dig or uncover the contamination in the trench.

Cleanup Approach

The site is being addressed in a long-term remedial phase focusing on cleanup of the entire site.

Response Action Status



Entire Site: An investigation is underway at the Carter Lee Lumber Company site to delineate the nature and extent of contamination in all media. The EPA will identify and evaluate potential routes of contaminant migration, assess risk posed by the site, and collect data to identify and evaluate remedial alternatives. The investigation is planned for completion in early 1995.

Environmental Progress



The site has been fenced to limit access and the trenches have been filled to reduce the potential for exposure to contaminated soil at the Carter Lee Lumber Company site. The EPA has assessed conditions at the site and determined that no immediate actions are required while studies are taking place and cleanup activities are being planned.

Site Repository



Not established.

COLUMBUS OLD MUNICIPAL LANDFILL #1 INDIANA

EPA ID# IND980607626



EPA REGION 5

Bartholomew County
Columbus

Other Names:
City Dump #1

Site Description

The City of Columbus operated the 12-acre Columbus Old Municipal Landfill #1 site without a permit from 1938 until 1966. The landfill reportedly accepted municipal and industrial wastes including solvents, acids, bases, paints, and heavy metals. The landfill is unlined, but the top is covered with a layer of sand, clay, and gravel where grass has grown. Wastes were deposited on the surface of the landfill, and the site forms a low barrier between the farmlands that surround it and the East Fork of the White River. Geologic conditions at the site make it easy for the groundwater to interact with and contaminate the surface waters in the area. The closest residence to the site is less than 1/2 mile away. Approximately 33,000 people live within a 3-mile radius of the site. There are private wells within 1/2 mile of the site, and public wells for water supply are within 3 miles.

Site Responsibility: This site is being addressed through Federal, State, and potentially responsible parties' actions.

NPL LISTING HISTORY

Proposed Date: 09/18/85

Final Date: 06/10/86

Threats and Contaminants



Groundwater at the site is contaminated with lead and chromium from paint wastes; however, information currently is not available on the extent of contamination of surface water or soil. Other contamination found on site includes acids, bases, and organic solvents. Possible health threats to people include drinking or coming in direct contact with contaminated groundwater or surface water, or accidentally ingesting contaminated soil or sediments. The site is prone to flooding, increasing the chance for contaminants to reach surface waters in the area.

Cleanup Approach

This site is being addressed in a long-term remedial phase focusing on cleanup of the entire site.

Response Action Status



Entire Site: The potentially responsible parties began an investigation in 1987 to determine the nature and extent of contamination at the site. The remedy was selected in early 1992. Based on the investigation, it was concluded that no further action was needed at the site. However, due to the possibility of a public road being constructed on the site, a contingency remedy also was selected. If a road is built, institutional controls will be implemented, including fencing, capping and monitoring.

Site Facts: In 1987, a Consent Order was signed between the EPA, the Indiana Department of Environmental Management, and three parties potentially responsible for the site contamination. Under the agreement, the parties agreed to study the site to determine the nature and extent of contamination at the landfill. In March 1992, based on the results of the investigation, a limited action alternative was selected by the EPA. Groundwater monitoring will continue at the site.

Environmental Progress



After adding this site to the NPL, the EPA performed preliminary investigations and determined that no immediate actions were required at the Columbus Old Municipal Landfill site while studies are taking place and cleanup activities are being planned.

Site Repository



Bartholomew County Public Library, 220 West Union Street, Kokomo, IN 46901

CONRAIL RAIL YARD (ELKHART)

INDIANA

EPA ID# IND000715490



EPA REGION 5

Elkhart County
Elkhart

Other Names:
County Road 1

Site Description

The Conrail Rail Yard (Elkhart) began operations in 1956 as part of the New York Central Railroad and continued operations as a subsidiary of the Penn Central Transportation Company until 1976. From 1962 to 1968, numerous citizen complaints regarding oil discharges from the rail yard to the nearby St. Joseph River were filed with State and local authorities. In 1976, Conrail took over the rail yard's functions. From 1976 to 1986, the rail yard experienced spills and releases of oil, diesel fuel, hydrochloric acid, caustic soda, and various petroleum-related substances. Also, track-cleaning fluids and engine degreasers were used and disposed of at the site. The site contains several ponds used to stabilize waste and separate oils and a disposal area, now covered, where rail yard wastes were discarded. In 1986, the EPA discovered volatile organic compounds (VOCs) in the groundwater near the site. Approximately 41,000 people live in Elkhart; the entire population obtains its drinking water from groundwater. The Elkhart Water Works serves approximately 41,000 persons living northeast of the site. The remaining population obtains drinking water from private residential wells.

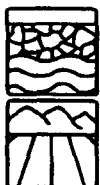
Site Responsibility: This site is being addressed through Federal actions.

NPL LISTING HISTORY

Proposed Date: 06/24/88

Final Date: 08/30/90

Threats and Contaminants



Groundwater and soil at the site contain VOCs. People could be exposed to hazardous substances from the site by accidentally coming into direct contact with or ingesting contaminated groundwater or soil.

Cleanup Approach

This site is being addressed in three stages: immediate actions and two long-term remedial phases focusing on cleanup of the entire site and cleanup of the source area of the contamination.

Response Action Status



Immediate Actions: The EPA began a program to sample the groundwater off site in 1986. The EPA sampled 88 residential wells and detected various VOCs.

The EPA provided bottled water to residents whose wells were affected. Also, the EPA installed 76 activated carbon filter units in residences. As part of the immediate action, the EPA also removed 28 drums containing waste paint from the nearby Martin property in 1987.



Entire Site: The EPA started an investigation of the nature and extent of contamination at the site in 1988. This study resulted in an Agency decision in 1991 to connect four affected residential areas to the City of Elkhart municipal water supply system, conduct groundwater monitoring, and install a groundwater extraction, treatment and disposal system. Design of the cleanup remedies is scheduled to begin late in 1992.



Source Area: In 1991, the EPA began further investigation of the source area of the contamination. The study is scheduled to be completed in 1993.

Environmental Progress



The immediate actions of providing bottled water, installing carbon filter units, and removing drums have reduced the potential for exposure to contaminated drinking water and continue to protect residents near the Conrail Rail Yard (Elkhart) site while cleanup actions are being planned and investigations are ongoing.

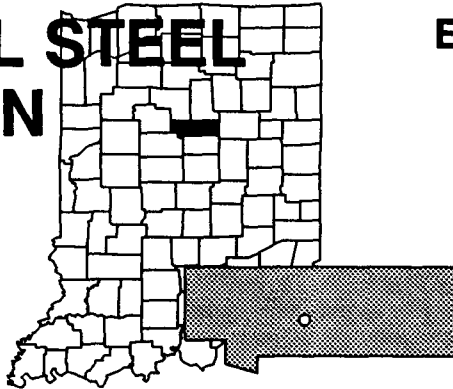
Site Repository



Elkhart Public Library, 300 South 2nd Street, Elkhart, IN 46516

CONTINENTAL STEEL CORPORATION INDIANA

EPA ID# IND001213503



EPA REGION 5

Howard County
Kokomo

Site Description

Since 1914, the Continental Steel Corporation has produced rods and wire products from recycled steel scraps on this 200-acre site. The site includes the plant, a lagoon, and a quarry. In 1946, wastes were collected in a surface impoundment, processed through a neutralization system, and discharged to Wildcat Creek. In 1984, 1985, and 1986, the Indiana Department of Environmental Management identified heavy metals in the impoundment and heavy metals and volatile organic compounds (VOCs) in the on-site groundwater. Operations at the site ended in 1986, when the facility went bankrupt. Approximately 1,600 people obtain drinking water from private wells within 3 miles of the site. The nearest well is 7,200 feet from the site. The site is situated above an aquifer.

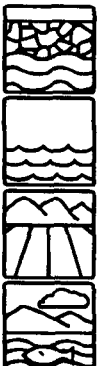
Site Responsibility: This site is being addressed through Federal and State actions.

NPL LISTING HISTORY

Proposed Date: 06/24/88

Final Date: 03/31/89

Threats and Contaminants



The groundwater and surface water contain VOCs and heavy metals including chromium, cadmium, iron, and manganese. Liquids in the quarry pond and lagoon contain VOCs and heavy metals including copper, zinc, and mercury. Sludges and creek sediments contain heavy metals including cadmium, chromium, iron, and manganese; VOCs; and polychlorinated biphenyls (PCBs). Soils are contaminated with heavy metals, PCBs, phenols, phthalates, and VOCs. PCBs were found in fish caught in Kokomo and Wildcat Creeks. People could be exposed to contaminants by coming into direct contact with or accidentally ingesting contaminated groundwater, soil, sludge, surface water, liquids, or sediments. In addition, eating contaminated fish from the creeks could pose a health hazard.

Cleanup Approach

This site is being addressed in two stages: initial actions and a long-term remedial phase focusing on cleanup of the entire site.

Response Action Status



Initial Actions: In 1990, the EPA began removing drums and visibly contaminated soil from a quarry area near the plant. Approximately 700 drums, 33 vats, and 55 tanks were found. All contained unknown materials. The EPA sampled the containers; the results are being analyzed. The EPA also investigated the pond within the quarry area and found approximately 500 empty drums and three storage tanks.



Entire Site: In 1991, the State began a study into the nature and extent of contamination at the site to determine the best methods to address the problems. The State is scheduled to complete the study in 1994. This complex site will be divided into additional cleanup phases as studies progress and more is known about the site.

Site Facts: Continental Steel Corporation filed for bankruptcy in 1985 and ceased operations at the site in 1986.

Environmental Progress



The removal of drums and contaminated soil has reduced the potential for exposure to contaminated materials at the Continental Steel Corporation site while studies are taking place and final cleanup activities are being planned.

Site Repository



Kokomo-Howard County Public Library, 220 West Union Street, Kokomo, IN 46901

DOUGLAS ROAD/UNIROYAL, INC. LANDFILL INDIANA

EPA ID# IND980607881



EPA REGION 5

St. Joseph County
Mishawaka

Site Description

The 19-acre Douglas Road/Uniroyal, Inc. Landfill site is owned by Uniroyal, Inc. and was operated between 1954 and 1979. From 1954 to 1971, solvents, fly ash, paper, wood stock, rubber, and plastic wrap were disposed of at the unlined landfill. After operations ceased, the landfill was covered with topsoil and seeded. According to the company, some 6,000 barrels of waste were disposed of at the landfill. The South Bend Water Department operates seven wells within 3 miles of the site that serve approximately 120,000 people. Approximately 2,100 people live within a one mile radius of the site. Judy Creek is located approximately 2,000 feet from the site.

Site Responsibility: This site is being addressed through Federal, State, and potentially responsible parties' actions.

NPL LISTING HISTORY

Proposed Date: 06/10/86

Final Date: 03/31/89

Threats and Contaminants



The groundwater is contaminated with hydrocarbons. Potential health risks include touching or accidentally ingesting the contaminated groundwater. The site is secured, reducing the potential for direct access.

Cleanup Approach

This site is being addressed in a long-term remedial phase focusing on cleanup of the entire site.

Response Action Status



Entire Site: Uniroyal, Inc. has initiated an investigation to determine the type and extent of contamination at the landfill and to identify cleanup remedies. The work was being conducted under the monitoring of the Indiana Department of Environmental Management (IDEM) until Uniroyal, Inc. filed for bankruptcy in 1992. Field work by the EPA is scheduled to begin in 1993, and the site investigation is scheduled for completion in 1994.

Site Facts: In 1989, the IDEM signed a Consent Order under which Uniroyal, Inc. initiated an investigation to determine the type and extent of contamination at the site. In 1992, Uniroyal Inc. filed for bankruptcy and informed the EPA and the IDEM that they could no longer conduct site investigation activities. The EPA is planning to take over these activities.

Environmental Progress



After adding this site to the NPL, the EPA performed preliminary investigations and determined that no immediate actions were required at the Douglas Road/Uniroyal, Inc. Landfill while studies take place and cleanup activities are planned.

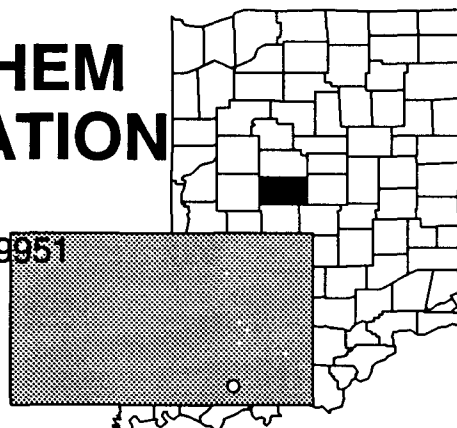
Site Repository



Mishawaka-Penn Public Library, 209 Lincoln Way, East, Mishawaka, IN 46544

ENVIROCHEM CORPORATION INDIANA

EPA ID# IND084259951



EPA REGION 5

Boone County
10 miles northwest of Indianapolis

Site Description

The 6 1/2-acre Envirochem Corporation site is an inactive facility that processed and reclaimed solvents from 1977 until 1982, when the State closed the site. Wastes such as resins, paint sludges, waste oils, and flammable solvents were received in drums and bulk tankers and were stored on site in drums and storage tanks. On-site accumulation and unauthorized discharge of contaminated stormwater, poor management of drum inventory, unapproved burning of chlorinated hydrocarbons and other solvents, and several spills brought the State and the EPA to investigate the site. The State prohibited further shipment of waste to the site; however, over 20,000 drums and 400,000 gallons of waste remained on site. Additionally, contaminated underground and aboveground storage tanks and wastewater in holding ponds were present. Approximately 50 people live within 1 mile of the site. The City of Indianapolis uses the Eagle Creek Reservoir as its drinking water supply. A rainstorm caused a waste pond to overflow into an unnamed ditch on site and then to Finley Creek. In 1985, the State noted that runoff from the site enters the Eagle Creek Reservoir.

Site Responsibility: This site is being addressed through Federal, State, and potentially responsible parties' actions.

NPL LISTING HISTORY

Proposed Date: 12/30/82
Final Date: 09/08/83

Threats and Contaminants



Groundwater is contaminated with volatile organic compounds (VOCs) and heavy metals including barium, lead, and nickel. Sediments contain lead. VOCs, polychlorinated biphenyls (PCBs), phenols, and phthalates are contaminating the soils. Surface water contains VOCs. People could be exposed to contaminants by coming into direct contact with or accidentally ingesting contaminated groundwater, soil, surface water, or sediments.

Cleanup Approach

This site is being addressed in two stages: immediate actions and a long-term remedial phase focusing on cleanup of the entire site.

Response Action Status



Immediate Actions: In 1983 and 1984, the EPA and a group of parties potentially responsible for site contamination performed immediate actions that included removing and treating waste from on-site storage tanks, removing and treating 5,650 cubic yards of contaminated soils, and fencing the site. Actions also were taken to prevent contaminated water from overflowing into surface waters off site. Bulk tanks and treating water from cooling ponds were removed, in addition to 3,085 drums and 167,000 gallons of liquid waste. The EPA also removed two underground storage tanks, cleaned and disposed of bulk storage tanks and miscellaneous piping, and placed a clay cap on the surface of the site. The holding pond was drained and capped, and the water in the pond was sent off site to an approved facility for treatment. Tanks on site were sampled, and the contents were tested for compatibility. Tanks with compatible contents were combined and then dried and cleaned. Sludge from the tanks was put into drums for off-site removal and treatment. Other underground tanks and pipes were located and recovered. The tanks containing PCBs were cleaned and rinsed. The transformer was drained and rinsed with fuel oil. The entire site was then capped and seeded, and drainages were set up to control the water that runs onto the site when it rains. In 1985, the EPA installed a sump to collect contaminated groundwater.



Entire Site: In 1987, the EPA completed a study of options for addressing contamination at the site and selected the following cleanup measures: installing a permanent cap over the site to prevent contaminants in the soil from moving off site, and installing a system to pump and treat contaminated groundwater. In 1991, the EPA amended the selected remedy to include soil vapor extraction, with a granulated activated carbon system to treat extracted vapor from contaminated soils rather than groundwater collection and treatment. This new remedy is expected to reduce the time required significantly to clean up the site. The EPA has completed all the field work necessary to design the cap, and final cleanup construction is expected to begin in late 1992.

Site Facts: A Consent Decree was negotiated between the EPA, the State of Indiana, and 254 potentially responsible parties, which included the establishment of a fund to finance the removal work that the EPA began in 1983. The parties also agreed to perform final cleanup work at the site. Based on a demonstration pilot study, the potentially responsible parties entered into a 1991 Consent Decree to use vapor extraction technology to clean up the site.

Environmental Progress



The removal of tanks, drums, liquid wastes, and contaminated soil, the securing of the site, and the additional immediate actions described above have reduced the potential for exposure to hazardous substances at the Envirochem Corporation site while final cleanup activities are taking place.

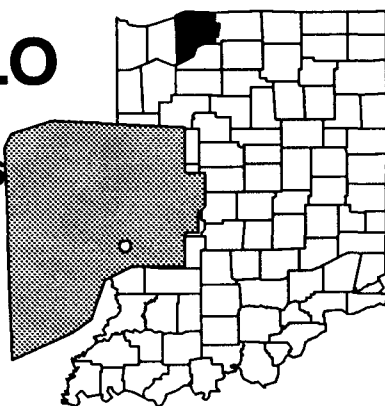
Site Repository



Hussey Memorial Library, 225 West Hawthorne, Zionsville, IN 46077

FISHER-CALO INDIANA

EPA ID# IND074315896



EPA REGION 5

LaPorte County
1 1/2 miles northeast
of Kingsbury Heights

Other Names:
Fisher-Calo Chemical and Solvents

Site Description

The 250-acre Fisher-Calo site consists of two separate tracts: a 10-acre portion of the site known as the "One Line Facility" and a 240-acre portion of the site known as the "Two Line Facility." The site is a former industrial chemical processing and distribution facility. The facility is located in an area that previously housed the Kingsbury Ordnance Plant, a U.S. military installation used to manufacture weapons. In the early 1960s, the ordnance plant was closed, and the land was purchased by a private developer who subdivided the property to form an industrial park. Sodium hypochlorite was produced and sulfur dioxide, chloride, ammonia, and various solvents were packaged at the site. For several years, a solvent reclamation facility that recovered paint and metal cleaning solvents for resale operated at the site. Cyanide, acids, and metal plating wastes were also accepted from other industries, stored in metal drums, and stockpiled on the site or dumped on the ground. In 1978, a fire broke out at the site's solvent reclamation facility, destroying several bulk storage tanks, trucks, and drums of chemical wastes and solvents. Later that year, buried drums were discovered on the property. In 1979 and 1980, drums containing chemicals and sludges were removed from the site. Waste materials, mostly stillbottoms, are stored in drums, tanks, and containers at the site. Some of the drums are reportedly leaking. The site is fenced, but only the main gate is guarded. Approximately 3,700 people live within 4 miles of the site. The nearest public water supply well is 1/2 mile from the site, and the closest residence using groundwater as a water source is 1 1/2 miles from the site.

Site Responsibility: This site is being addressed through Federal and potentially responsible parties' actions.

NPL LISTING HISTORY

Proposed Date: 12/30/82

Final Date: 09/08/83

Threats and Contaminants



On-site groundwater and soils are contaminated with volatile organic compounds (VOCs). On-site soils also contain polychlorinated biphenyls (PCBs) and semi-volatiles. The greatest health risk to people is through drinking contaminated groundwater or touching contaminated soils.

Cleanup Approach

This site is being addressed in two stages: initial actions and a long-term remedial phase focusing on cleanup of the entire site.

Response Action Status



Initial Actions: In 1989, the parties potentially responsible for site contamination, under EPA monitoring, fenced the site and staged and removed empty drums. The potentially responsible parties are sampling and disposing of the drums, tanks, and containers of hazardous waste and the visibly contaminated soil. These activities are nearly completed.



Entire Site: The EPA conducted an investigation into the nature and extent of contamination at the site. The remedy selected in 1990 includes several components. Soil contaminated with PCBs and semi-volatiles will be treated by excavation and on-site incineration; soil flushing or soil vapor extraction will treat any VOC-contaminated soils remaining after excavation. Groundwater extraction wells will be installed from which the groundwater will be pumped and treated with air stripping; treated groundwater will be reinjected into the aquifer. Asbestos will be assessed and limited asbestos removal or repair of existing structures is planned. A new water supply will be installed. Soil gas testing, and installation and upgrading of security fences around the site are also planned. The design of the selected technologies is underway.

Site Facts: Fisher-Calo entered into a Consent Agreement with the EPA in 1982, agreeing to conduct quarterly groundwater monitoring at the site to determine whether contaminants had dissipated to acceptable levels. In 1988, the EPA issued a Unilateral Order to the potentially responsible parties requiring them to conduct initial cleanup activities at the site.

Environmental Progress



Fencing the site, removing empty drums, and disposing of hazardous waste and contaminated soils have reduced the potential for exposure to contaminants at the Fisher-Calo site while cleanup technologies are being designed and cleanup activities are being planned.

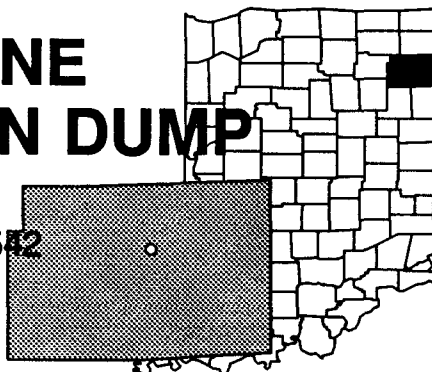
Site Repository



La Porte County Public Library, 904 Indiana Avenue, La Porte, IN 46350

FORT WAYNE REDUCTION DUMP INDIANA

EPA ID# IND980679542



EPA REGION 5

Allen County
Fort Wayne

Site Description

The 35-acre Fort Wayne Reduction Dump site is a former municipal landfill and waste disposal facility. Before 1967, the site was uncultivated farmland often used for dumping unknown waste. Between 1967 and 1976, the facility accepted wastes including residential garbage, sewage, industrial liquid waste, paper, and wood. Wastes were incinerated, and the residual ash was disposed of on the site. Volatile liquids were dumped from drums into a pit adjacent to the Maumee River. The site consists of two areas: the 15-acre eastern portion used as the general refuse landfill, and a 5-acre western section used for the disposal of industrial wastes, building debris, barrels of unidentified wastes, and residual ash from the incinerator. In 1970, Fort Wayne Reduction changed its name to National Recycling Corporation (NRC) and built a recycling plant for processing solid waste. The recycling stopped in 1975, and the building was torn down in 1985. NRC was acquired by Service Corporation of America (SCA) in 1973. SCA was denied a municipal refuse permit, and operations ceased in 1976. Waste Management acquired SCA in 1984. Two residential communities are located approximately 1/2 mile from the dump. The Maumee River borders the property, and the site is in the 100-year flood plain. Approximately 1,100 people use private wells as a source of drinking water. Two areas on the site are designated as wetlands.

Site Responsibility: This site is being addressed through Federal and potentially responsible parties' actions.

NPL LISTING HISTORY

Proposed Date: 10/15/84

Final Date: 06/10/86

Threats and Contaminants



Groundwater is contaminated with volatile organic compounds (VOCs) and heavy metals. Heavy metals, polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), phenols, and VOCs are present in the soil. People who come into direct contact with or accidentally ingest contaminated groundwater or soil may be at risk. Contaminants have migrated into the Maumee River through groundwater discharge. The wetlands on the site are an important habitat for many plants and animals. If contaminants seep into the wetlands, the wildlife may be harmed.

Cleanup Approach

This site is being addressed in a long-term remedial phase focusing on cleanup of the entire site.

Response Action Status



Entire Site: In 1988, the EPA selected a remedy to clean up the site by: closing the eastern portion of the site to prevent erosion and eliminating potential direct contact threats; monitoring the groundwater as it flows from the site to the Maumee River; installing a system to collect groundwater between the site and the Maumee River and treating the groundwater, if necessary; excavating 4,600 drums and incinerating their contents; backfilling the excavated areas; closing the western portion of the site to prevent erosion and eliminate potential direct contact threats; constructing a fence around the site; imposing deed restrictions on the use of the land; protecting the wetlands during the cleanup activities; and installing erosion mats and planting vegetation to reduce erosion during Maumee River floods. Waste Management, under EPA monitoring, designed the technical specifications for the cleanup. Construction of the remedy for the eastern portion was completed in the summer of 1991. The design of the cleanup measures for the western portion currently is underway. All cleanup is scheduled for completion in the summer of 1994.

Environmental Progress



After adding this site to the NPL, the EPA performed preliminary investigations and determined that no immediate actions were required at the Fort Wayne Reduction Dump site. Cleanup actions in the eastern portion of the site currently are underway, while the design of the cleanup approach for the western site area is being completed.

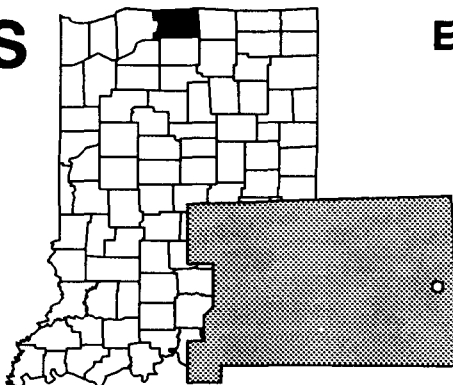
Site Repository



Allen County Public Library, 900 Webster Street, Fort Wayne, IN 46801

GALEN MYERS DUMP/DRUM SALVAGE INDIANA

EPA ID# IND980999635



EPA REGION 5

St. Joseph County
Osceola

Site Description

From 1960 to 1982, drums from local industries were stored and recycled at the 5-acre Galen Myers Dump/Drum Salvage site. The tops were removed, the contents were dumped into a pit and driveway, and the drums were sold as trash containers. In 1984, the EPA found many leaking and deteriorating drums on the site and removed them in 1985. In 1986, the Indiana Department of Environmental Management (IDEM) found soil and private wells to be contaminated. Approximately 17,000 people obtain drinking water from wells located within 3 miles of the site. The St. Joseph River is located 1 mile from the site.

Site Responsibility: This site is being addressed through Federal and State actions.

NPL LISTING HISTORY

Proposed Date: 06/24/88

Final Date: 03/31/89

Threats and Contaminants



Groundwater and soil are contaminated with various volatile organic compounds (VOCs). The soil also contains phthalates, polychlorinated biphenyls (PCBs), and pesticides. Most area residents use private wells for drinking water. The municipal water supply is drawn from the same aquifer as the private wells. People who drink contaminated water or come into direct contact with the water or soils may be at risk.

Cleanup Approach

This site is being addressed in two stages: immediate actions and a long-term remedial phase focusing on cleanup of the entire site.

Response Action Status



Immediate Actions: In 1985, the EPA removed 274 drums of waste and contaminated soils and transported them to a Federally approved storage facility. In 1987, the EPA provided alternate drinking water to 10 residences. This involved installing a combination air stripping and carbon filtration system at two residences, whole-house clean carbon filters at three residences, and point of use filters on taps at eight residences.



Entire Site: In 1991, the State began a study to determine the extent of the groundwater and soil contamination at the site. Once the study is completed, final site cleanup measures will be recommended.

Environmental Progress



The removal of contaminated materials and the provision of an alternate source of drinking water to affected residences have eliminated the potential of exposure to contaminated drinking water and will continue to protect residents near the Galen Myers Dump/Drum Salvage site while studies leading to the selection of the final cleanup methods are being planned.

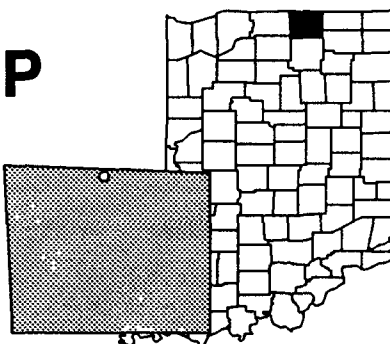
Site Repository



Not established.

HIMCO DUMP INDIANA

EPA ID# IND980500292



EPA REGION 5

Elkhart County
Elkhart

Site Description

The 50-acre Himco Dump site, located in the Town of Elkhart, operated as a dump from 1960 until 1976. During its operation, general refuse and medical, pharmaceutical, and industrial wastes were disposed of on the site. As waste was brought into the dump, marshy land was filled in and then covered with sand. The elevation at the center of the site is built up approximately 15 feet. Along the perimeter of the site, the elevation is 5 feet higher than the original levels. The disposal practices make it difficult to determine exact locations where the waste was buried; however, the present topography of the site suggests that waste may have been deposited over the entire 50 acres. Vegetation on the site appears to have been affected by the contamination. During a site inspection in 1984, the EPA observed several leachate streams at various locations, as well as strong sulfate and methane odors. The EPA also detected several contaminants in monitoring wells downgradient of the site. In 1974, the State Health Commissioner advised the site operator to drill deep wells to replace six contaminated shallow residential wells located adjacent to and just south of the site. A 1988 inspection of the site by the Indiana State Board of Health (ISBH) and the Department of Environmental Management identified disposal areas that were uncovered and exposed to the environment. Wells within 3 miles of the site serve at least 20,000 people. The closest residences to the site are located on the southern perimeter. A 200-home mobile home park is located downgradient of the site, to the south of the landfill. Several small industries, a residential area, and land used for agricultural purposes are located in the vicinity of the site.

Site Responsibility: This site is being addressed through Federal and State actions.

NPL LISTING HISTORY

Proposed Date: 06/24/88

Final Date: 02/21/90

Threats and Contaminants



Groundwater is contaminated with heavy metals including selenium and beryllium and the volatile organic compounds (VOCs) trichloroethylene (TCE) and toluene. The dump is located over a continuous portion of shallow groundwater that is the sole source of drinking water for the town of Elkhart. The drinking water supply for the town may be at risk if site-related contaminants migrate into this shallow groundwater aquifer under the site. The contamination on the site also could adversely affect the nearby wetlands.

Cleanup Approach

The site is being addressed in two stages: immediate actions and a long-term remedial phase focusing on cleanup of the entire site.

Response Action Status



Immediate Actions: In response to complaints of well contamination, the site operator installed deep wells to replace nearby contaminated residential drinking water wells.



Entire Site: In 1989, the EPA began a study to assess the nature and extent of site contamination and to identify cleanup options. The first phase of field work has been completed and is being evaluated. Additional field work began in mid-1991. The EPA expects to finish this study in 1993. Cleanup work is anticipated to begin in late 1994.

Site Facts: In 1975, the owner of the site signed a Consent Agreement with the Stream Pollution Control Board of Indiana that resulted in the closure of the site in 1976. Possible contamination of six residential shallow wells, ranging from 22 to 62 feet deep, was reported to the Elkhart County Health Department, the ISBH, and the EPA in 1974. In response to these complaints, the site operator drilled new water wells for these six individuals, and when these wells were sampled in 1984, they were not found to be contaminated.

Environmental Progress



New wells installed by the site operator for the six residences with contaminated wells has reduced the potential for exposure to the contaminated groundwater. After listing the Himco Dump site on the NPL, the EPA performed preliminary evaluations and determined that the site does not pose an immediate threat to the surrounding community or the environment while investigations leading to the selection of a final cleanup remedy for the site are taking place.

Site Repository



Elkhart Public Library, Pierre Moran Branch Library, 2400 Benham Avenue, Elkhart, IN 46517

INTERNATIONAL MINERALS & CHEMICAL CORP. (TERRE HAUTE EAST PLANT) INDIANA

EPA ID# INT190010876



EPA REGION 5

Vigo County
Terre Haute

Other Names:
IMC (Terre Haute East Plant)

Site Description

The International Minerals & Chemical Corp. (Terre Haute East Plant) site consists of 6 acres of a 37-acre lot and is located in southeastern Terre Haute, about 2 miles east of the Wabash River. It is bordered on the east and west by various railroad facilities. From 1946 until 1954, the Commercial Solvents Corporation (CSC) manufactured and stored benzene hexachloride (BHC), a raw material used in the production of pesticides, at the facility. Wastes generated from the production of BHC were collected on the site property in a sump and eventually were disposed of at the Canal Road Dump, located a few miles south of the property. In 1975, International Minerals and Chemical Corporation (IMC) purchased the site. Beginning in 1979, IMC collected samples of soils from the East Plant facility and the Canal Road Dump and analyzed them for the presence of site-related contaminants. IMC also installed monitoring wells on and around the East Plant property to determine if contaminants were migrating from the site into the groundwater. The results of these studies confirmed the presence of BHC in soil samples and in samples collected from two of the groundwater monitoring wells. The EPA became involved in activities at the site in 1984, when contamination was detected in some of the monitoring wells. While residential wells were found to contain varying amounts of volatile organic compounds (VOCs), none of the samples taken contained BHC. The population of the City of Terre Haute is approximately 61,000. The majority of the residences within the vicinity of the site are connected to the municipal water supply system; the others depend on private wells for their drinking water supply. There are approximately 30 nearby residential wells located downgradient of the site.

Site Responsibility: This site was addressed through Federal, State, and potentially responsible parties' actions.

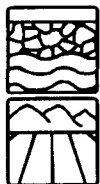
NPL LISTING HISTORY

Proposed Date: 10/15/84

Final Date: 06/10/86

Deleted Date: 02/11/91

Threats and Contaminants



Groundwater and soils were contaminated with VOCs including low levels of BHC. Due to the nature of this chemical, it is unlikely that it migrated into the local water supply system. During sampling, three residential wells were found to contain chloroform and associated derivatives at or above the maximum contaminant level for safe drinking water. The removal of the source of contamination resulted in the reduction of contaminants to within safety levels. Potential health threats included direct contact with or inhalation of contaminated soils and accidental ingestion of contaminated groundwater prior to the completion of cleanup activities.

Cleanup Approach

The site was addressed through immediate actions; further investigations showed that no other cleanup actions were necessary except for maintenance of existing remedies.

Response Action Status



Immediate Actions: IMC excavated approximately 18,500 cubic yards of contaminated soil, rubble, piping, and other debris. The debris was stockpiled in an on-site mound on the East Plant property. After the completion of this mound, concentrations of BHC in groundwater declined relatively quickly to within safety levels. The stockpile was covered with clay, common fill, and loam, then seeded in 1980 to prevent erosion that could have resulted in exposure to contaminants. This cover included a surface drainage collection system and venting mechanisms that allow gas to escape from the soil. In 1981, IMC, under State and EPA supervision, installed additional groundwater monitoring wells uphill and downhill of the stockpile mound. From 1981 to the present, these wells have been sampled quarterly for the presence of BHC and other contaminants.



Entire Site: Because of the immediate actions conducted by IMC in 1980, a decision was reached in 1988 by the EPA that no further cleanup action was necessary at the site. However, the following maintenance activities are being conducted over a 30-year period: inspecting the existing cover on a quarterly basis; maintaining the vegetation cover; monitoring BHC in the groundwater semi-annually for 5 years and annually for the next 25 years; annually reporting of monitoring results to the State; restricting access to the site; and establishing a contingency plan that provides appropriate cleanup measures to be taken if there is a chance that BHC may be released into the environment from the site. The parties potentially responsible for site contamination are conducting the maintenance activities as specified, under EPA monitoring. Both the EPA and the State of Indiana have determined that all appropriate responses at the site have been completed and that no further cleanup actions are necessary. The site was deleted from the NPL in 1991.

Environmental Progress



The party potentially responsible for the site contamination took immediate action to remove contaminated materials from the site, which eliminated the potential for exposure to hazardous substances and effectively controlled the movement of contaminants into the groundwater. The EPA has determined that the site no longer poses a threat to public health or the environment and has deleted the International Minerals & Chemical Corp. (Terre Haute East Plant) site from the NPL.

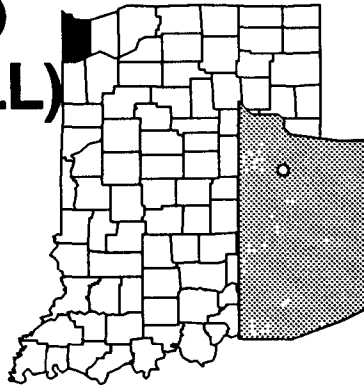
Site Repository



Not established.

LAKE SANDY JO (M & M LANDFILL) INDIANA

EPA ID# IND980500524



EPA REGION 5

Lake County
Gary

Site Description

The Lake Sandy Jo (M & M Landfill) site covers 40 acres in Gary. The site was a former water-filled borrow pit that was used as a landfill between 1971 and 1980. Various wastes, including construction and demolition debris, garage and industrial wastes, and drums are believed to be buried on the site. The borrow pit originally was dug to support construction of I-90/84, which is adjacent to the site. In 1971, groundwater filled the pit, and it was used for a short time as a recreational lake. From 1971 until 1975, the pit was filled with various debris. Local residents became concerned over odors from the site and, in 1976, the owners were ordered to drain the lake and to restrict fill to demolition debris only. Later in 1976, the site was sold to Glen and Gordon Martin, who continued filling operations without a license until the site was closed in 1980. Approximately 5,300 people live within 3 miles of the site and draw water from more than 1,400 wells.

Site Responsibility: This site is being addressed through Federal actions.

NPL LISTING HISTORY

Proposed Date: 12/30/82

Final Date: 09/08/83

Threats and Contaminants



Groundwater, sediments, surface water, and soils contain heavy metals such as arsenic, beryllium, cadmium, and silver; volatile organic compounds (VOCs) including methylene chloride and chloroform; polychlorinated biphenyls (PCBs); and the pesticide DDT. The soils also are contaminated with polycyclic aromatic hydrocarbons (PAHs), phthalates, and heavy metals. People who come in direct contact with or accidentally ingest contaminated groundwater, soil, surface water, or sediments may be at risk.

Cleanup Approach

The site is being addressed in three stages: immediate actions and two long-term remedial phases focusing on cleanup of the soil and sediments and extension of the water line.

Response Action Status



Immediate Actions: In 1986, the EPA installed a 6-foot chain-link fence to restrict access to the site. An existing 4-foot fence on the swampy southern side of the site was deemed a sufficient barrier to complete the enclosure. Several days after the installation, vandals stole 100 feet of the fence. To discourage future vandalism, the fence was painted with fluorescent paint, reducing its resale value.



Soil and Sediments: Following the selection of cleanup activities in 1986, the EPA has: consolidated all contaminated soil and sediments; installed additional monitoring wells; and covered the site with clean soil and reseeded. These actions were completed in 1990. A groundwater and surface water monitoring program, deed restrictions on the use of the land, and institutional controls on the use of the aquifer are expected to be in effect in 1992.



Water Line: Based on the 1986 decision on site cleanup, the EPA is extending a water line to residences affected by the site. The main water line is constructed, however the 40 to 45 residences have not been connected to the water system nor has the system been transferred to the local utility. These activities are scheduled to be completed in 1992.

Environmental Progress



The installation of a security fence around the site and a cover over the site has reduced threats posed by the Lake Sandy Jo (M & M Landfill) site to the surrounding community and the environment while final cleanup activities are being completed.

Site Repository



Gary Public Library, 220 West 5th Avenue, Gary, IN 46402

LAKELAND DISPOSAL SERVICE, INC.

INDIANA

EPA ID# IND064703200



EPA REGION 5

Kosciusko County
Claypool

Site Description

Lakeland Disposal Service, Inc. operated a 39-acre sanitary landfill 3 1/2 miles northwest of Claypool. The landfill was licensed by the Indiana State Board of Health (ISBH) to accept municipal and certain industrial wastes from specific facilities. Beginning in 1974, general refuse and hazardous wastes including cyanide and sludges containing paint, hydroxides of aluminum, and heavy metals were disposed of at the site. In 1978, the Kosciusko County Circuit Court ordered the landfill closed as a result of improper operations. The same year, a new owner began subdividing and selling portions of the landfill to mobile home owners. In 1982, the State conducted a methane gas survey at the closed landfill and detected high concentrations of the gas beside one of the mobile homes. The State filed an injunction requesting that the residents move from the landfill property. In 1983, the Kosciusko County Board of Zoning Appeals ordered the residents to move off the landfill site. Currently, no one resides at the site. Sloan Adams Ditch runs through the site into Palestine Lake 2 miles away, which is used for recreational activities. There are approximately 1,100 residents within 2 miles of the site who rely on private wells for their water supply. Claypool's two municipal wells are within 3 miles of the site.

Site Responsibility: This site is being addressed through Federal, State, and potentially responsible parties' actions.

NPL LISTING HISTORY

Proposed Date: 06/24/88

Final Date: 03/31/89

Threats and Contaminants



The groundwater is contaminated with heavy metals including arsenic, barium, and cadmium and volatile organic compounds (VOCs) including trichloroethene and vinyl chloride. On-site soils are contaminated with heavy metals. Accidental ingestion of contaminated water from wells, direct contact with contaminated soil, and the risk of fire and explosion may pose health threats. The area has several wetlands, which could be affected by contaminated runoff from the site.

Cleanup Approach

The site is being addressed in a long-term remedial phase focusing on cleanup of the entire site.

Response Action Status



Entire Site: The parties potentially responsible for the site contamination have begun an investigation to determine the nature and extent of contamination and to identify alternatives for long-term cleanup of the site. The first phase of the investigation was completed in early 1991. The second phase, which included installation of more monitoring wells, wetland delineation, and residential well sampling, was completed in late 1991. The investigation is scheduled for completion in 1992, with cleanup remedies expected to be selected in 1993.

Site Facts: In 1989, Dana Corporation, General Motors Corporation, United Technologies Automotive, Inc., and Warsaw Black Oxide, Inc. signed a Consent Order with the EPA to conduct an investigation of site contamination.

Environmental Progress



After adding the Lakeland Disposal Service, Inc. site to the NPL, the EPA determined that the site does not pose an imminent threat to the surrounding community and the environment while the investigations leading to the selection of final cleanup remedies for the site are taking place.

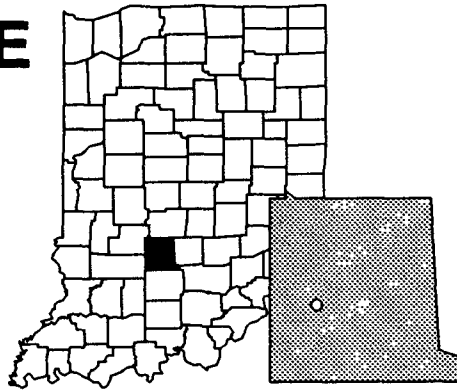
Site Repository



Kosciusko County Health Department, 100 West Center Street, 3rd Floor, Room 2,
Warsaw, IN 46580

LEMON LANE LANDFILL INDIANA

EPA ID# IND980794341



EPA REGION 5

Monroe County
Bloomington

Site Description

The Lemon Lane Landfill site is located on the western edge of the City of Bloomington. The site encompasses 10 acres, 3 of which are owned by a private citizen. From 1950 to 1964, the landfill, which had no liner or runoff controls, accepted both municipal and industrial wastes. Allegedly, wastes were incinerated on site. No records were kept of the types or quantities of wastes received. Of primary concern were large quantities of exposed and leaking capacitors containing polychlorinated biphenyls (PCBs). Starting in 1980, the State of Indiana and the EPA sampled the area several times. No PCBs were detected in nearby residential wells at the time, nor were any surface discharges observed. However, the geology of the area suggests that groundwater contamination is possible. Westinghouse Electric Corporation, the party potentially responsible for contamination at the site, is handling cleanup of Lemon Lane Landfill, as well as other NPL sites, including one authorized landfill, and an inactive, City-owned wastewater treatment plant in the Bloomington area (Neal's Landfill, Neal's Dump, Bennett Stone Quarry, the Anderson Road Landfill, and the Winston-Thomas Treatment Plant). Westinghouse is planning to construct an incinerator that will comply with all applicable local, State, and Federal laws.

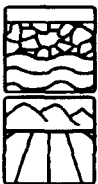
Site Responsibility: This site is being addressed through Federal and potentially responsible parties' actions.

NPL LISTING HISTORY

Proposed Date: 12/30/82

Final Date: 09/08/83

Threats and Contaminants



The groundwater and soils are contaminated with PCBs. Direct contact with and accidental ingestion of contaminated soil or groundwater are potential health threats. Capping the landfill has reduced the possibility for contaminants to reach the groundwater.

Cleanup Approach

The site is being addressed in two stages: immediate actions and a long-term remedial phase directed at cleanup of the entire site.

Response Action Status



Immediate Actions: In 1983, the EPA constructed a fence around the site to prevent access to the area. The EPA also removed exposed PCB capacitors, graded and covered the southern slopes of the site, regraded and contoured the land to prevent ponding or erosion, and capped the site. In 1988, a low-flow dye trace study of the groundwater system around the landfill was conducted to determine the hydrologic connection of springs to the site and to better define the groundwater system. On the basis of this study, the EPA concluded that effects on the local groundwater wells are minimal.



Entire Site: An alternate water supply was provided to a resident whose wells showed signs of contamination. One nearby residence was connected to the city water supply in 1988, after the dye trace study determined that its well water supply was contaminated. A synthetic cap was placed on the landfill in 1988. In 1990, Westinghouse concluded high-flow dye trace studies of the flow and presence of contaminated groundwater. Westinghouse will conduct the remaining remedies for the site, which include: excavation of approximately 176,000 cubic yards of soil and material from the landfill to a pre-Westinghouse depth plus 3 feet of buffer zone; incineration of excavated materials in an approved facility; and periodic groundwater monitoring. The excavation and incineration activities are contingent on the approval of the permit applications for the incinerator and a landfill for ash disposal. The permit applications were submitted in the summer of 1991.

Environmental Progress



By constructing a fence to restrict site access, removing the PCB capacitors, and grading and installing a synthetic liner cap over the site to limit movement of contaminants from the property, the potential for exposure to hazardous materials at the Lemon Lane Landfill site has been reduced while final cleanup activities continue.

Site Repository



Monroe County Public Library, 303 E. Kirkwood Ave., Bloomington, IN 47491

MAIN STREET WELL FIELD INDIANA

EPA ID# IND980794358



EPA REGION 5

Elkhart County
Elkhart

Other Names:

Elkhart Main Street Wellfield

Site Description

The Main Street Well Field site consists of 15 wells on 10 acres of land in Elkhart. This well field is the largest of three municipal well fields and supplies about 70 percent of the drinking water for 40,000 residents of Elkhart. In 1981, during an EPA National Groundwater Supply Survey, the well field was found to be contaminated with volatile organic compounds (VOCs). The EPA resampled water from the well field a month later and discovered elevated concentrations of VOCs in the water used for consumption and in three production wells. Monitoring wells were installed by the City, and sampling indicated that two industries on the eastern boundary of the well field were potential sources of groundwater contamination. In 1982, the City installed two interceptor wells to help prevent further migration of the contaminant plume. At first the contaminant levels decreased, but between 1983 and 1985, they gradually increased.

Site Responsibility: The site is being addressed through Federal and State actions.

NPL LISTING HISTORY

Proposed Date: 12/30/82

Final Date: 09/08/83

Threats and Contaminants



Groundwater and soils contain VOCs including trichloroethylene (TCE). Individuals who come in direct contact with or accidentally ingest contaminated groundwater or soil may be at risk.

Cleanup Approach

The site is being addressed in four stages: immediate actions and three long-term remedial phases focusing on cleanup of the groundwater, the aquifer, and the soil.

Response Action Status



Immediate Actions: In 1987, the EPA provided drinking water to approximately 300 residents and extended the water main to six businesses, a church, and 293 homes. Carbon filters were installed in 11 homes.



Groundwater: In 1985, the EPA selected a remedy to provide a potable water supply by constructing air stripping facilities to remove the contaminated flow from the Main Street Well Field. Contaminated water is pumped from the aquifer, treated, and discharged to the existing water treatment plant and distribution system. The EPA completed all actions involving the installation of the air stripper in 1987.



Aquifer: Based on the results of an investigation of the contaminated aquifer, the EPA has selected the following remedies: vacuum extraction of VOCs in the contaminated soil; removal and disposal of contaminants; installation of new well interceptors to prevent continued plume migration; continued use of the air stripper and groundwater monitoring, as well as imposing deed restrictions to limit future uses of the site. The technical design of the approved remedies is currently in development.



Soil: The EPA will conduct an investigation into the type and extent of remaining soil contamination from the multiple sources contributing to the well field contamination. Once the investigation is completed, scheduled for 1993, the most appropriate methods for soil cleanup will be recommended.

Environmental Progress



A potable water supply has been provided to the communities served by the Main Street Well Field, thereby reducing the potential for exposure to contaminated groundwater. Further investigations will be conducted to determine the sources of soil contamination while the selected remedies are being designed to address contamination of the underlying aquifer.

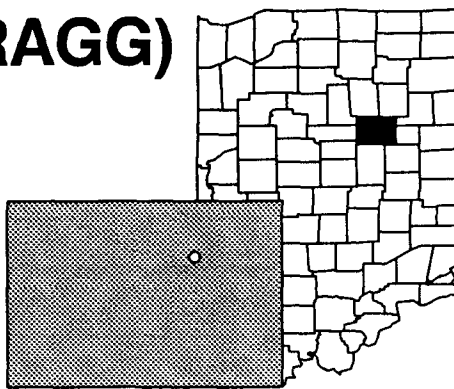
Site Repository



Elkhart Public Library, 300 South 2nd Street, Elkhart, IN 46516

MARION (BRAGG) DUMP INDIANA

EPA ID# IND980794366



EPA REGION 5

Grant County
Marion

Site Description

The Marion (Bragg) Dump site covers 72 acres and is located on Central Avenue, just outside Marion. The area is relatively flat, with the Mississinewa River bordering the site on the east and the north. The landfill was formerly a gravel pit. The land was leased for the disposal of various wastes by the Radio Corporation of America and the Bragg Construction Company, which was closed in 1975. That year a transfer station was opened at the site by Waste Reduction Systems, which closed in 1977. The dump contains approximately 1,100,000 cubic yards of wastes, some of which are hazardous, including solvents, plasticizers, lead, and cadmium. Residents in the area depend on groundwater from private and municipal wells for their water supply. A 15-acre pond in the middle of the landfill is connected to the upper aquifer. Some of the northern portion of the site is within the 100-year flood plain of the Mississinewa River.

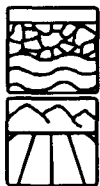
Site Responsibility: This site is being addressed through Federal and potentially responsible parties' actions.

NPL LISTING HISTORY

Proposed Date: 12/30/82

Final Date: 09/08/83

Threats and Contaminants



The groundwater is contaminated with volatile organic compounds (VOCs) including benzene and trichloroethene. The soil is contaminated with polycyclic aromatic hydrocarbons (PAHs) and arsenic. Those who come in direct contact with or accidentally ingest contaminated groundwater or soil may be at risk, although the wells in the immediate area, which draw on the aquifer, have not been found to contain contaminants.

Cleanup Approach

The site is being addressed in a long-term remedial phase directed at cleanup of the entire site.

Response Action Status



Entire Site: In 1987, the EPA selected the following remedies for the site: regrading and capping the site to promote runoff, reduce infiltration, eliminate leachate seepage, and prevent direct contact with surface soils and exposed waste; providing and maintaining flood control measures to protect the portions of the site in the flood plain; constructing and maintaining a fence around the site; replacing private drinking water wells in the deep aquifer for users within a specified boundary; sealing shallow wells; conducting supplemental studies to complete investigations of the groundwater and pond; and operating and maintaining the remedies at the site. Some of the potentially responsible parties installed a fence around the site, drilled new monitoring wells, and completed capping the site. The supplemental studies of the groundwater and on-site pond to determine if further action is needed will continue for two or three years.

Environmental Progress



By constructing a fence around the site and a cap over the site, the potential for exposure to hazardous materials from the Marion (Bragg) Dump site has been reduced. Further cleanup activities currently are underway and groundwater studies are ongoing.

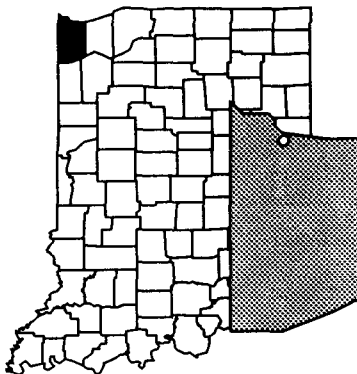
Site Repository



Marion Public Library, 600 South Washington Street, Marion, IN 46953.

MIDCO I INDIANA

EPA ID# IND980615421



EPA REGION 5

Lake County

Gary

Other Names:

Midwest Solvents Recovery

Site Description

The Midwest Solvent Recovery Company (MIDCO) I site is a 4-acre, abandoned industrial waste recycling, storage, and disposal facility in Gary. Recycling, storing, and disposing of industrial wastes began at the site some time before 1973. In 1973, approximately 6,000 to 7,000 drums were observed on the site. Later, four bulk tanks, each with a capacity of 4,000 to 10,000 gallons, were found on the site. In 1976, a fire burned approximately 14,000 drums of chemical waste. Operations resumed in 1977 under new management, but by 1979, the facility was abandoned, leaving an estimated 14,000 drums stockpiled on site. In 1981, severe flooding caused water in the area to drain into a neighboring city to the west; contact with the flood water reportedly resulted in skin burns. Following a fire in 1976, MIDCO I moved to a new location, known as MIDCO II, which also is on the NPL. Residential neighborhoods are near the site, with one resident living as close as 900 feet from the site. Twelve drinking water wells have been identified in the Calumet Aquifer, within approximately a mile from the site, in the downgradient groundwater flow direction. The Calumet Aquifer is highly susceptible to contamination from surface sources. The area surrounding the site is mixed light industrial, commercial, and residential, and contains wetlands.

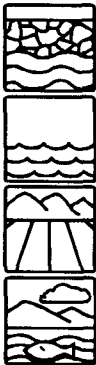
Site Responsibility: This site is being addressed through Federal and potentially responsible parties' actions.

NPL LISTING HISTORY

Proposed Date: 12/30/82

Final Date: 09/08/83

Threats and Contaminants



Groundwater contains volatile organic compounds (VOCs) including trichloroethylene (TCE), methylene chloride; semi-volatile compounds; metals; and cyanide. Sediments and soils are contaminated with VOCs, semi-volatiles, polychlorinated biphenyls (PCBs), metals, and chlordane, a pesticide. VOCs, chromium, lead, cadmium, and cyanide were detected in surface waters northeast of the site. Sodium and chloride were the most concentrated contaminants found in the groundwater and surface water. These contaminants may have migrated from the nearby salt depot of the Indiana Highway Department. Contaminants in the soil are leaching into the groundwater. The contaminated groundwater in turn is migrating off site and eventually may affect downgradient drinking water wells. People who come in direct contact with or accidentally ingest contaminated groundwater, surface water, sediments, or soil may be at risk. The contamination also could adversely affect wildlife and plants in or around the wetlands.

Cleanup Approach

The site is being addressed in two stages: immediate actions and a long-term remedial phase focusing on cleanup of the entire site.

Response Action Status



Immediate Actions: A security fence was installed around the site in 1981. In 1982, to address the immediate threats to the public, the EPA removed extensive surface wastes, an underground tank, drums, and the top 1 foot of contaminated soil. Much of the site was then covered with a temporary clay cover.



Entire Site: To address the contaminated subsurface soil, sediment, and groundwater, the EPA selected the following cleanup actions in 1989: treatment of approximately 12,400 cubic yards of contaminated soil and subsurface materials using a combination of soil vapor extraction and solidification/stabilization, followed by on-site disposal; excavation and on-site solidification/stabilization of approximately 1,200 cubic yards of contaminated sediment from surrounding wetlands; installation of a final site cover; installation and operation of a deep underground injection well for disposal of the contaminated groundwater; installation and operation of a treatment system to remove hazardous substances from the contaminated groundwater, followed by deep well injection of the salt-contaminated water, or installation and operation of a treatment system, followed by reinjection of the salt-contaminated groundwater into the Calumet Aquifer in a manner that will prevent spreading of the salt plume; groundwater monitoring; and implementation of deed and access restrictions. The EPA is designing the technical specifications for the cleanup. Once the design phase is completed, the cleanup activities will begin. In 1992, the EPA approved an amendment to the selected remedies. The amendment proposed a change in the method for determining how much soil will be treated.

Site Facts: In June 1985, a group of potentially responsible parties agreed to reimburse the EPA for past cleanup action costs and to perform the site investigation. This Consent Decree became effective in August 1985. The parties also have agreed to perform final cleanup activities at the site. The EPA issued an Administrative Order in 1989, instructing the potentially responsible parties to conduct the remaining site cleanup.

Environmental Progress



The removal of the contaminated materials and soils from the site and the installation of a fence and a temporary cover have reduced the threat of exposure to hazardous materials while cleanup actions for the MIDCO I site are being designed.

Site Repository



Gary Public Library, 220 West 5th Avenue, Gary, IN 46402

MIDCO II INDIANA

EPA ID# IND980679559



EPA REGION 5

Lake County
Gary

Other Names:
**Midwest Industrial Waste Disposal
Company**

Site Description

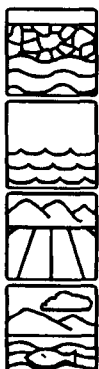
The Midwest Industrial Waste Disposal Company (MIDCO) II site is an abandoned, industrial waste recycling/disposal facility covering 7 acres in Gary. The operators of the MIDCO I facility, another NPL site, relocated to the MIDCO II location after a fire in 1976. Operations at MIDCO II began in 1976 and included temporary bulk liquid and drum storage of waste and recyclable materials, neutralization of acids and caustics, and on-site dumping of waste into pits, which allowed wastes to percolate into the groundwater. One of these pits had an overflow pipe leading into a ditch that drains into the Grand Calumet River. In 1977, a fire at MIDCO II destroyed equipment, buildings, and an estimated 50,000 to 60,000 drums. The site was abandoned after the fire. Burned-out drums, drums containing chemical wastes, 12 aboveground tanks with 10,000-gallon capacity, and one underground tank were abandoned on the site. Approximately 479,000 people live within 3 miles of the site.

Site Responsibility: This site is being addressed through Federal and potentially responsible parties' actions.

NPL LISTING HISTORY

Proposed Date: 10/15/84
Final Date: 06/10/86

Threats and Contaminants



Contaminants affecting the groundwater include volatile organic compounds (VOCs) such as benzene, toluene, and trichloroethylene (TCE); other organics including isoparone; cyanide; and arsenic, lead, and other heavy metals. The groundwater also is highly contaminated with sodium and potassium chloride. Sediments and soils are contaminated with similar substances and polychlorinated biphenyls (PCBs). Potential health risks exist for individuals include accidentally ingesting or coming into direct contact with the contaminated soil, sediment, or groundwater. Migration of contaminants through the groundwater may threaten the off-site aquifer and downstream wetlands.

Cleanup Approach

The site is being addressed in two stages: immediate actions and a long-term remedial phase focusing on cleanup of the entire site.

Response Action Status



Immediate Actions: From 1984 to 1989, the EPA repaired and extended the site fence; sampled and removed all the remaining drums, tanks, and debris from the site's surface; and excavated the sludge pits and filter pit contents. The resulting PCB-contaminated pile was removed and disposed of in an off-site hazardous waste landfill in early 1986. Most of the cyanide-contaminated pile also was removed.



Entire Site: The major components of the remedies selected by the EPA in 1989 are: on-site treatment of an estimated 35,000 cubic yards of contaminated soil and waste material by solidification/stabilization, with the solidified material remaining on site; excavation and on-site solidification/stabilization of approximately 500 cubic yards of contaminated sediments in the ditch adjacent to the northeastern boundary of the site; installation and operation of a groundwater pump and treat system to intercept and treat contaminated groundwater; installation and operation of injection wells for disposal of the treated water; installation of a conduit in the ditch along the site and a final site cover; restriction of site access and imposition of deed restrictions as appropriate; and related testing and long-term monitoring. The EPA is designing the technical specifications for the cleanup. Once the design phase is completed, the cleanup activities will begin. In 1992, the EPA approved an amendment to the selected remedies. The amendment proposed a change in the method for determining how much soil will be treated.

Site Facts: In June 1985, a group of potentially responsible parties agreed to reimburse the EPA for past cleanup action costs and to perform the site investigation. This Consent Decree became effective in August 1985. In December 1989, the EPA issued an Administrative Order to the parties to perform the cleanup actions at the MIDCO I and II sites.

Environmental Progress



By fencing the MIDCO II site and removing drums, tanks, and debris, the EPA has reduced the potential for exposure to hazardous materials while the technical specifications for the remedies selected for final site cleanup are being prepared by the EPA.

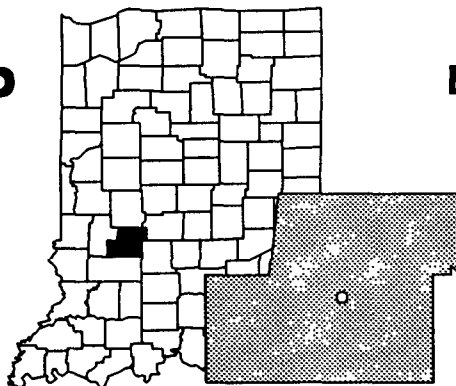
Site Repository



Gary Public Library, 220 West 5th Avenue, Gary, IN 46402

NEAL'S DUMP (SPENCER) INDIANA

EPA ID# IND980794549



EPA REGION 5

Owen County

Spencer

Site Description

The Neal's Dump site covers approximately 1/2 acre in Spencer. The dump operated from 1967 until 1971, when it was closed. During its operation, the owner accepted electrical capacitors, oil-stained rags, and sawdust from the Westinghouse facility nearby. The Westinghouse Electric Corporation, the party potentially responsible for the contamination at the site, is treating Neal's Dump, as well as three other NPL sites, an inactive city-owned wastewater treatment plant, and an authorized landfill in the Bloomington area. These sites are: Neal's Landfill, Lemon Lane Landfill, Bennett Stone Quarry, Winston-Thomas Treatment Plant, and Anderson Road Landfill. Westinghouse is planning to construct an incinerator for municipal solid waste that will comply with all applicable local, State, and Federal laws. After incinerating all the materials removed from the sites, Westinghouse and the City of Bloomington will determine whether the incinerator should continue to operate as a municipal solid waste facility or be dismantled. Approximately 175 people live within 1 mile of the site, and 954 people live within 3 miles. Forty-nine wells are located within a mile of the site. Located adjacent to the site are natural springs, a stream, and a river.

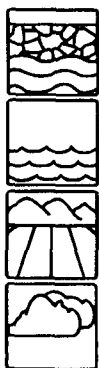
Site Responsibility: This site is being addressed through Federal and potentially responsible parties' actions.

NPL LISTING HISTORY

Proposed Date: 10/15/84

Final Date: 06/10/86

Threats and Contaminants



The groundwater, surface water, soils, and air are contaminated with polychlorinated biphenyls (PCBs). Potential health risks exist for individuals who accidentally ingest or come into direct contact with the contaminants or those who inhale contaminated particulates in the air on the site.

Cleanup Approach

The site is being addressed in two stages: immediate actions and a long-term remedial phase focusing on cleanup of the entire site.

Response Action Status



1990.

Immediate Actions: In the mid-1980s, under the EPA's monitoring, the parties potentially responsible for the contamination installed a cap and constructed a security fence and a surface drainage control system. The work was completed in



Entire Site: The Westinghouse Electric Corporation, under monitoring by the EPA, will conduct the following cleanup actions: excavate all contaminated materials plus a 2-foot buffer zone; incinerate excavated materials in an approved facility; and monitor groundwater. The Westinghouse Electric Company is currently designing the technologies to be used in the cleanup. In the summer of 1991, permit applications were submitted for constructing the incinerator and for landfilling its waste by-product ash. Construction of a high-temperature incinerator for the excavated materials is expected to begin in 1993. Upon completion of the incinerator construction, the Lemon Lane Landfill, Neal's Dump, Neal's Landfill and Bennett's Dump sites will be excavated in a prescribed order.

Environmental Progress



By constructing a security fence, capping the site, and installing a drainage control system, the parties potentially responsible for site contamination have reduced the potential for exposure to hazardous materials at the Neal's Dump site while final cleanup actions are being designed.

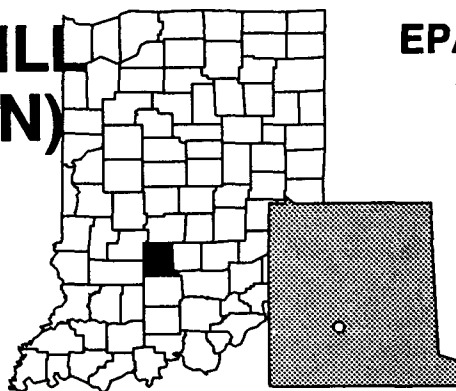
Site Repository



Monroe County Public Library, 303 E. Kirkwood Ave., Bloomington, IN 47491

NEAL'S LANDFILL (BLOOMINGTON) INDIANA

EPA ID# IND980614556



EPA REGION 5

Monroe County
Bloomington

Site Description

The Neal's Landfill (Bloomington) site covers approximately 18 acres in Bloomington. The site was used as an industrial and municipal waste landfill from 1950 to 1972. The main fill area measures about 300 yards. Later, the landfill was used as a pasture for beef cattle. A number of springs surface near the site and flow to Richland Creek, a tributary of the White River. In 1966 and 1967, capacitors and arrestors containing polychlorinated biphenyls (PCBs), as well as PCB-contaminated capacitor insulation material, rags, and filter clay, were disposed of at the landfill. Capacitors and other contaminated materials are visible on the surface. PCBs have been found in surface soils in the northeast portion of the landfill, the springs near the site, and the sediments of Richard Creek. The Westinghouse Electric Corporation, the party potentially responsible for the contamination at the site, is treating Neal's Landfill (Bloomington) site, as well as three other NPL sites, an inactive City-owned wastewater treatment plant, and an authorized landfill in the Bloomington area. These areas are Neal's Dump, Lemon Lane Landfill, Bennett's Dump, Winston-Thomas Treatment Plant, and Anderson Road Landfill. Approximately 121 people live within a mile of the site, and about 1,085 people live within 3 miles of the site. Conard's Branch and Richland Creek are nearby.

Site Responsibility: This site is being addressed through Federal and potentially responsible parties' actions.

NPL LISTING HISTORY

Proposed Date: 10/22/81
Final Date: 09/08/83

Threats and Contaminants



Groundwater, surface water, sediments, and soils are contaminated with PCBs from materials dumped at the landfill. Potential health risks exist for individuals who accidentally ingest or come into direct contact with these contaminants.

Cleanup Approach

The site is being addressed in two stages: immediate actions and a long-term remedial phase directed at cleanup of the entire site.

Response Action Status



Immediate Actions: Under the EPA's monitoring, the parties potentially responsible for the contamination installed a cap, erosion control fences, a security fence, and drainage control trenches. Warning signs have been posted along Conard's Branch and Richland Creek. A sediment collection system also was installed at Conard's Branch. Westinghouse removed PCB-contaminated sediments from Richland Creek and Conard's Branch in late 1989. A treatment plant has been constructed by Westinghouse to treat spring water discharge from Neal's Landfill.



Entire Site: In 1988, Westinghouse began a cleanup program, including: excavating all 4,060 tons of sediment from Conard's Branch; storing excavated materials in an approved facility until an approved incinerator and by-product disposal area are developed; operating a carbon treatment system for spring water discharges; and monitoring the groundwater. Excavation and incineration of landfill materials will occur when the incinerator and ash landfill permits are issued. Westinghouse is conducting a dye trace study to investigate groundwater flow patterns from Neal's Landfill and is waiting for a sufficient rainfall to trigger a "high flow" in the water table to make this study as comprehensive as possible. Groundwater monitoring occurs on a quarterly basis for on-site wells. The spring water treatment plant has been operational since early 1990. Dye trace testing began in April 1992 and sampling was completed in June 1992. Removal of sediments from mouths of springs is ongoing.

Environmental Progress



Immediate actions including capping and fencing the landfill and long-term activities including excavating sediment, treating the spring water, and groundwater monitoring have reduced the potential for exposure to hazardous materials at the Neal's Landfill (Bloomington) site while final cleanup actions are being completed.

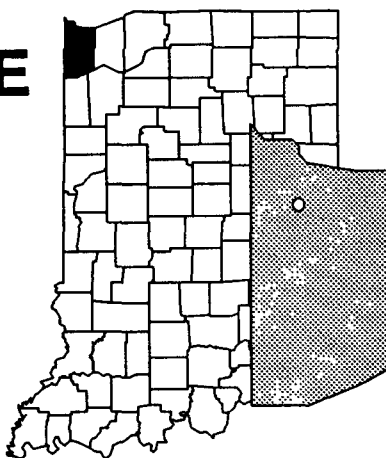
Site Repository



Monroe County Public Library, 303 E. Kirkwood Ave., Bloomington, IN 47491

NINTH AVENUE DUMP INDIANA

EPA ID# IND980794432



EPA REGION 5

Lake County
Gary

Site Description

The Ninth Avenue Dump site is located on 17 acres in an industrialized area within the city limits of Gary, Indiana. From 1973 until 1975, the site was used for the disposal of liquid hazardous waste, with some dumping occurring until 1980. Disposal operations included dumping wood debris into marshy areas, pouring liquid waste onto the debris, and covering the area with fill material. During a site inspection conducted in 1975, the Indiana State Board of Health (ISBH) estimated that 500,000 gallons of liquid industrial waste had been dumped at the site. When operations ceased at the dump, several thousand drums and some tankers of waste remained on site. The owner began removing some site debris, but in the fall of 1980, disposal operations at the site were halted when the EPA filed suit against the site owners and operators under the Resource Conservation and Recovery Act (RCRA). In 1981, heavy rains caused severe flooding in the area surrounding the dump, and runoff from the site flowed into the Hessville neighborhood, flooding streets and basements of homes. In order to control surface water drainage from the site, Hammond City officials ordered the construction of a dirt dike. The dike currently remains intact and prevents water from flowing into Hammond from Gary. The Ninth Avenue Dump site lies approximately 700 feet north of the MIDCO I NPL site and is close to several other potential sources of contaminants. Approximately 33,000 people live within a 2-mile radius of the site, with the nearest residential area located approximately 800 feet west of the site. The site is adjacent to several ponds and a wetland area.

Site Responsibility: This site is being addressed through Federal and potentially responsible parties' actions.

NPL LISTING HISTORY

Proposed Date: 12/30/82

Final Date: 09/08/83

Threats and Contaminants



Groundwater is contaminated with volatile organic compounds (VOCs) including benzene, toluene, and xylenes; polycyclic aromatic hydrocarbons (PAHs); and heavy metals including nickel and silver. On-site groundwater contains a hydrocarbon layer containing polychlorinated biphenyls (PCBs), pesticides, VOCs, and PAHs. PAHs, toluene, cadmium, and lead were detected in off-site surface soil. On-site sediment samples contained PAHs and PCBs. Accidental ingestion of contaminated groundwater, surface water, soil, or sediments may present health risks. Groundwater monitoring at the nearest active private drinking well did not detect any site-related contaminants. The fence installed around the perimeter of the site has been vandalized, and trespassing occurs frequently, increasing the potential for individuals to come into direct contact with the contaminants. Migratory birds and other wildlife are abundant in the on- and off-site wetlands, and contamination could harm them.

Cleanup Approach

The site is being addressed in three stages: immediate actions and two long-term remedial phases focusing on cleanup of the oil layer and cleanup of the soil, sediment and groundwater.

Response Action Status



Immediate Actions: The site owner removed and disposed of 10,000 drums, tank cars, and the first foot of contaminated surface soils from the site from 1984 to 1985. The EPA fenced the site in 1987 to restrict public access. In addition, a 24-hour guard is posted at the entrance.



Oil Layer: In 1988, the EPA selected cleanup actions to contain the oil-contaminated portion of the site and to extract the oil layer floating on the groundwater. The remedy includes: construction of a soil-bentonite slurry wall to completely surround the oil layer; installation of an oil/groundwater extraction and recharge system; installation of an on-site groundwater treatment system to allow for dewatering of the slurry wall; monitoring of groundwater inside and outside the slurry wall to ensure its effectiveness; and installation of an on-site oil storage tank. The oil layer is estimated to be 250,000 to 700,000 gallons, of which 100,000 to 500,000 may be recoverable. The design of the slurry wall was completed by the potentially responsible parties in 1990. Construction of the slurry wall is underway. The design of the oil recovery/groundwater treatment was completed in mid-1991. Construction of the system began shortly thereafter. Both phases of construction are scheduled to be completed by 1993.



Soil, Sediment and Groundwater: This phase addresses the remaining threats to the site, which include contaminated soil, sediment, fill material, groundwater, and oil collected and stored in the on-site storage tanks. In 1989, the EPA selected the following actions for cleanup of the site: excavation of approximately 36,000 cubic yards of oil-contaminated waste and fill down to the native sand level; thermal treatment of excavated fill and extracted oil, most likely in a mobile on-site incinerator; removal of debris and contaminated sediments from on- and off-site surface water bodies; filling the excavated area with treatment process residuals, trench spoils, pond sediments, and debris; covering the area contained by the slurry wall with a cap; extraction, treatment, and reinjection of contaminated groundwater inside the slurry wall to promote soil flushing; discharge of a small quantity of treated groundwater outside the slurry wall to compensate for infiltration; deed and access restrictions to prohibit the use of the groundwater under the site and to protect the cap; and long-term groundwater monitoring. The potentially responsible parties began design of this remedy in 1989. Actual cleanup began in mid-1991.

Site Facts: A Consent Decree was signed by the owner and the EPA in December 1983, requiring the owner to remove wastes from the site and to determine the type and extent of site contamination. An order was issued by the EPA to the potentially responsible parties in December 1988, requiring cleanup of the oil-contaminated portions of the site, as well as the soil, sediment and groundwater. A second order was issued in August 1989, requiring the potentially responsible parties to perform additional design studies and cleanup of the soil and groundwater.

Environmental Progress



By removing the most heavily contaminated materials; fencing in the site; and posting a guard at the entrance 24 hours a day to restrict access, the potential for exposure to hazardous materials on the Ninth Avenue Dump site has been reduced while final cleanup actions are being designed and completed.

Site Repository

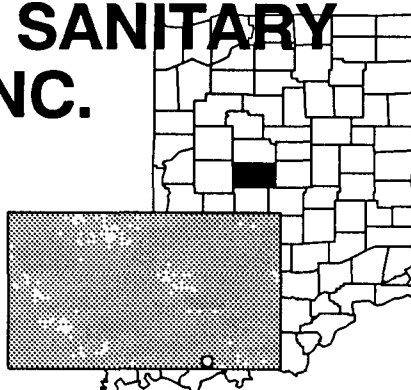


Gary Public Library, 220 West 5th Avenue, Gary, IN 46402

NORTHSIDE SANITARY LANDFILL, INC.

INDIANA

EPA ID# IND050530872



EPA REGION 5

Boone County
Zionsville

Site Description

The Northside Sanitary Landfill (NSL) covers approximately 70 acres of a 170-acre parcel of land. The site is located in Union Township, about 10 miles northwest of Indianapolis. Over 16 million gallons of hazardous wastes have been deposited in the landfill. The NSL opened in the 1950s as an open dump and was licensed by the State in 1971 to accept hazardous wastes. From 1972 to 1973, numerous operating deficiencies, including the failure to cover refuse, surface burning, underground fires, leachate, and vermin problems resulted in orders from the Indiana State Board of Health (ISBH) to cease operations. In 1982, the owner, at the direction of the ISBH, installed a leachate collection system and three submerged leachate collection tanks on the western side of the site. After the owner removed 400,000 gallons of leachate from the three tanks and disposed of it by spraying it on the landfill, the Indiana Division of Land Pollution Control advised the owner that leachate would have to be solidified prior to disposal. By early 1983, the State Environmental Management Board issued a notice of violation and ordered the owner to stop accepting hazardous waste. A small residential community, Northfield, is located to the north of the site. Approximately 50 residences are located within a mile of the site, and 1,750 residences within 3 miles of the site use wells for drinking water. An unnamed ditch runs along the western edge of the landfill and joins Finley Creek. Finley Creek flows into Eagle Creek about 1/2 mile downstream from the site. Eagle Creek flows south for 10 miles before it empties into Eagle Creek Reservoir, which supplies approximately 6 percent of the drinking water for the City of Indianapolis.

Site Responsibility: This site is being addressed through Federal and potentially responsible parties' actions.

NPL LISTING HISTORY

Proposed Date: 09/08/83

Final Date: 09/21/84

Threats and Contaminants



Groundwater, soils, surface water, and sediments are contaminated with pesticides, acids, oils, and volatile organic compounds (VOCs) including benzene and trichloroethylene (TCE). Potential health risks exist from accidental ingestion of contaminated soils and sediments. Drinking contaminated groundwater also may pose health risks, as may the consumption of fish from Finley Creek that have bioaccumulated contaminants in their tissues. Contamination in the creek may harm wildlife in or around the water.

Cleanup Approach

The site is being addressed in a long-term remedial phase focusing on cleanup of the entire site.

Response Action Status



Entire Site: In 1987, the EPA selected the following remedies to address the contamination at the site: deed and access restrictions to prevent further development of the site; installation of a multi-layer cap over the site; re-routing of surface waters to reduce the potential for contamination migration; leachate collection and treatment; groundwater collection and treatment; and monitoring to ensure treatment effectiveness. The EPA has completed most of the field work necessary to design the site cleanup activities. Once the design activities are completed, final cleanup will begin. A 1991 amendment to the remedies selected for Northside Sanitary Landfill called for a pipeline to be constructed for the Indianapolis publicly owned treatment works.

Site Facts: The EPA has reached an agreement with the potentially responsible parties to assume responsibility for the cleanup action. The Northside Sanitary Landfill Site is located near the Envirochem Corporation, another site on the NPL.

Environmental Progress



After adding the Northside Sanitary Landfill, Inc. site to the NPL, the EPA performed preliminary investigations and determined that the site does not pose an imminent threat to the surrounding communities or the environment while final cleanup remedies are being planned.

Site Repository

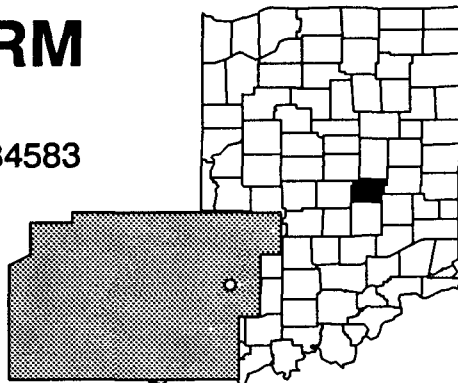


Hussey Memorial Library, 225 West Hawthorne, Zionsville, IN 46077

POER FARM

INDIANA

EPA ID# IND980684583



EPA REGION 5

Hancock County
3 miles north of Wilkinson, 5 miles
southeast of Knightstown

Other Names:
Norman Poer Farm

Site Description

Poer Farm is a 5-acre site located on a small hill between two streams and along East County Road about 3 miles north of Wilkinson. The site is an abandoned tract of land with a house and barn that have collapsed and have been vandalized. The surrounding area is open farmland that supports crops of soybeans and corn. The site consists of three separate areas where Norman Poer and Michael Coleman received and stored about 275 drums of solvents and paint resins from 1973 until 1983. The owners planned to blend these materials into low-quality paint for bridges and barns. They abandoned the project and left the 55-gallon drums on the site. The EPA inspected the site and found that the drums were leaking, and vegetation surrounding the area was damaged. The EPA analyzed the drums and soils underneath them and found volatile organic compounds (VOCs) and heavy metals. Agricultural lands completely surround the Poer Farm site, and the nearest residence is approximately 650 feet to the north. Approximately 500 people live 3 miles north of the site in Wilkinson, and approximately 2,300 people live 5 miles away in Knightstown.

Site Responsibility: This site was addressed through Federal, State, and potentially responsible parties' actions.

NPL LISTING HISTORY

Proposed Date: 09/08/83
Final Date: 10/21/84
Deleted Date: 02/11/91

Threats and Contaminants



Soils on site contained VOCs including toluene, xylene, and ethyl benzene and heavy metals such as cadmium, arsenic, and lead. The EPA sampled the entire site following emergency actions and found no significant levels of contamination that could pose a threat to the environment. Therefore, people near the site are not at risk from exposure to hazardous chemicals.

Cleanup Approach

The site was addressed through emergency actions; further investigations showed that no other cleanup actions were required.

Response Action Status



Emergency Actions: In 1983, the EPA removed all wastes and 6 to 8 inches of soils from the drum storage areas on site. All solid and liquid wastes from the drums were properly disposed of at EPA-regulated landfills. The well on site was sampled, and results showed that the levels of arsenic, cadmium, and lead were at or below the State and Federal standards for drinking water. The site was fenced, and signs to warn the public of contaminants were posted.



Entire Site: The EPA completed a study of the nature and extent of contamination at the site in 1985. The party potentially responsible for contamination at the site completed a second study in 1988, under the EPA's monitoring. The purpose of the second study was to determine if the immediate cleanup actions at the site were effective and to ensure that no significant contamination remained at the site that could threaten the health of people around it. Based on the results of the second study, the EPA determined that no further action is needed at the Poer Farm site and deleted the site from the NPL on February 11, 1991.

Site Facts: In 1985, a potentially responsible party signed a Consent Order with the EPA and the Indiana Department of Environmental Management, under which the party agreed to reimburse the EPA for past response action costs and to carry out the study of the nature and extent of contamination at the site.

Environmental Progress



The removal and disposal of hazardous waste and contaminated soils from the Poer Farm site have eliminated the threat to human health and the surrounding environment. The EPA, in conjunction with the State of Indiana, has deleted the Poer Farm site from the NPL.

Site Repository



Not established.

PRESTOLITE BATTERY DIVISION

INDIANA

EPA ID# IND006377048



EPA REGION 5

Knox County
Northeast of Vincennes

Other Names:

Eltra Corporation -
Prestolite Battery Division

Site Description

The 17 1/2-acre Prestolite Battery Division site is an inactive facility that manufactured lead-acid batteries. The Autolite Battery Corporation set up the plant in 1945. Several companies owned and operated the facility until Allied Chemical Company, the latest owner of the site, ceased operations and closed the plant in 1985. Allied received a permit allowing it to temporarily operate the site, but decided to close before obtaining a long-term operating permit for the plant. Wastewaters from the plant's operations were contaminated with lead and sulfuric acid. Prior to 1978, the plant discharged its wastewaters directly to the Vincennes Sanitary Sewer System. From 1978 until the plant closed in 1985, the plant treated its wastewaters and then released them to a lagoon on site. The Vincennes Treatment Works accepted the overflow from the lagoon. The plant also released air contaminated with lead. Soil on site and in the area has been contaminated with lead, mainly from airborne particles. Malfunctions of equipment on site and accidental spills also have contributed to the contamination of soils. During the plant's operations, industrial sewer lines at the site became plugged with lead, and as a result of leaks and sewer line backups, the soil around some of these sewers and sumps became contaminated with lead. Soil on the site also was contaminated with polychlorinated biphenyls (PCBs). The manufacturing building on site remains intact, although all process equipment has been removed from inside the building. A fence encloses the site. The site is located within the flood plain of the Wabash River, which is 5,000 feet west of the site. Surface water from the site drains to Kelso Creek and Snapp Creek; both creeks are 3/4 mile from the site. The closest residence is 50 feet from the site, and there are approximately 500 people within a mile of the site. The city of Vincennes maintains seven wells for its supply, located 3 miles from the site. Private wells also are located in the area around the site.

Site Responsibility: This site is being addressed through Federal and potentially responsible parties' actions.

NPL LISTING HISTORY

Proposed Date: 09/18/85

Final Date: 10/04/89

Threats and Contaminants



Air, groundwater, soils, and surface water are contaminated with lead. Soils also are contaminated with PCBs. People who come in direct contact with or accidentally ingest contaminated groundwater, soil, or surface water may suffer adverse health effects. People also may be exposed to contaminants by inhaling dust particles.

Cleanup Approach

This site is being addressed in two stages: immediate actions and a long-term remedial phase focusing on cleanup of the entire site.

Response Action Status



Immediate Actions: In 1989, the party potentially responsible for site contamination removed more than 6,800 cubic yards of lead-contaminated sediment from the site. Soils from known areas of PCB contamination also have been excavated and removed from the site. A concrete-lined wastewater storage lagoon has been emptied and cleaned. The lagoon area is surrounded by a fence to limit access. Sewer lines that run under the manufacturing building have been capped. Disturbed soils and fill material remain where wastewater sewer lines and contaminated soils were excavated.



Entire Site: In 1988, the EPA started an investigation to define the nature and extent of pollutants at the site. This study is examining the effectiveness of the immediate cleanup actions and is defining the threat that remaining contamination at the site poses to the health of people living and working in the area. The study also is evaluating the various options for addressing the final cleanup of the site. The first phase of field work is complete. The second phase is currently underway and is expected to be completed in early 1993.

Environmental Progress



The removal of contaminated sediments and soils and the installation of a fence around the lagoon have reduced the potential of exposure to hazardous materials at the Prestolite Battery Division site while final studies are taking place and cleanup activities are being planned.

Site Repository



Knox County Public Library, 502 North 7th Street, Vincennes, IN 47591

REILLY TAR & CHEMICAL CORP. (INDIANAPOLIS PLANT) INDIANA

EPA ID# IND000807107



EPA REGION 5

Marion County
Indianapolis

Site Description

The 120-acre Reilly Tar & Chemical Corporation site has been used for the production of specialty chemicals and related products since the early 1950s. Until 1972, a coal-tar refining and wood-treatment facility using creosote operated on the site. Located on site are a trench, a landfill, and several pits used to dispose of wastes. A lime pond received boiler cooling water. The site is fenced. There are approximately 5,200 residents within 3 miles of the site using groundwater for drinking water supplies. A residence is located less than 2,000 feet from the site. All residents now have city water available to them, although private wells still are in use.

Site Responsibility: This site is being addressed through Federal and potentially responsible parties' actions.

NPL LISTING HISTORY

Proposed Date: 09/08/83

Final Date: 09/21/84

Threats and Contaminants



Groundwater and surface water are contaminated with creosotes and ammonia. Soil is contaminated with volatile organic compounds (VOCs) including toluene. The potential health risks include coming in direct contact with or accidentally ingesting contaminated groundwater, surface water, or soil.

Cleanup Approach

This site is being addressed in a long-term remedial phase focusing on cleanup of the entire site.

Response Action Status



Entire Site: A potentially responsible party, Reilly Industries, Inc., currently is conducting an investigation, under EPA monitoring, into the nature and extent of contamination at the site. The investigation is defining the contaminants and will recommend alternatives for the final cleanup. The investigation is scheduled to be completed in mid-1992. Shortly thereafter, the EPA will select the final cleanup strategy for the site.

Site Facts: Reilly Industries, Inc. has entered into a Consent Order with the EPA. The company agreed to conduct the study into the nature and extent of contamination at the site and to recommend alternatives for final cleanup.

Environmental Progress



After adding this site to the NPL, the EPA performed preliminary investigations and determined that no immediate actions were required at the Reilly Tar and Chemical Corporation site while studies are taking place and cleanup activities are being planned.

Site Repository



Indianapolis-Marion County Public Library, 40 East St. Clair Street, Indianapolis, IN 46206

SEYMOUR RECYCLING CORPORATION INDIANA

EPA ID# IND040313017



EPA REGION 5
Jackson County
2 miles southwest of Seymour

Site Description

The 14-acre Seymour Recycling Corporation site is made up of two parts: a 12-acre area surrounded by a berm and fence to confine rainwater and prevent access to the site, and a 2-acre area located directly to the northeast of the larger area. From 1970 to 1980, the site was operated as a processing center for waste chemicals. Wastes were accumulated on site in drums, bulk storage tanks, and tank trucks. By 1980, there were approximately 98 storage tanks and 50,000 drums on site. The majority of the drums were rusted and punctured, some were missing lids, and a large number leaked. The leaks caused contaminants to cover a widespread area, toxic vapors to be released from the site, and on-site fires. The facility closed in 1980. Surface drums and tanks and their contents were removed in 1981 and 1982. Contaminated soils continue to pollute the aquifers. The shallow aquifer is highly contaminated with various hazardous chemicals including volatile organic compounds (VOCs). Approximately 100 homes are located within 1 mile of the site. Most private water supply wells for these residences have been disconnected and replaced with water from the City of Seymour water supply system. Contaminated runoff from the site entered nearby drainage ditches that flow into the White River and then to the Ohio River. Releases of contaminants from the site resulted in fish kills.

Site Responsibility: This site is being addressed through Federal, State, and potentially responsible parties' actions.

NPL LISTING HISTORY

Proposed Date: 10/22/81
Final Date: 09/08/83

Threats and Contaminants



Groundwater contains VOCs, chloroform, phenols, and heavy metals including arsenic, barium, iron, and manganese. Soils are contaminated with high levels of VOCs and heavy metals including beryllium. People could be exposed to contaminants by accidentally coming in direct contact with or ingesting contaminated groundwater or soil. People who eat contaminated fish may suffer adverse health effects.

Cleanup Approach

This site is being addressed in three stages: immediate actions and two long-term remedial phases focusing on groundwater cleanup and soil cleanup.

Response Action Status



Immediate Actions: As a result of a fire in 1980, chemical runoff from the site posed a risk to nearby residents. Approximately 300 people were temporarily relocated and the parties potentially responsible for site contamination removed several thousand drums from the site. In 1981, the EPA removed chemicals from tanks at the site and disposed of those wastes off site. A dike was installed around the site to prevent rainfall from mixing with wastes on the ground. The site fence was upgraded. The surface water treatment plant located on site was upgraded in 1982. From 1982 to 1984, potentially responsible parties removed approximately 50,000 drums, 100 storage tanks, and contaminated soil from 75 percent of the site's surface and partially covered the site with a temporary soil cap. Homes surrounding the site were connected to the city water distribution system in 1984 and 1985 due to the threat of groundwater contamination. A total of 177,500 gallons of flammable liquids were incinerated. Approximately 31,800 cubic yards of crushed drums, scrap metal, sludge, and contaminated soil and debris, 359 lab packs of sludge, and 296 drums of flammable solids were landfilled. Approximately 104,200 gallons of inert liquids were injected into a deep well. Warning signs have been posted, and a 24-hour guard will remain at the site throughout construction activities.



Groundwater: The selected cleanup remedy to address the groundwater plume includes implementation of a plume stabilization system that will extract, treat, and discharge contaminated groundwater to the Seymour Wastewater Treatment Plant. The potentially responsible parties constructed the groundwater pump and treat system, which is operational. In order to sufficiently reduce contamination at the site, the groundwater extraction and pump and treat system may have to be operated for up to 30 years. A third extraction well and line will be constructed.



Soil: The selected cleanup remedies to address soil contamination include: putting in place deed and access restrictions and other controls to prevent future development of the site and the adjacent property; breaking down hazardous components of the soil through bioremediation; installing a soil vapor extraction system; extracting and treating contaminated groundwater at and beyond the site boundaries; installing a cap; excavating contaminated sediment and consolidating sediment beneath the cap; and regular monitoring to determine the effectiveness of these cleanup activities. The potentially responsible parties have completed construction of the soil cap. The vapor extraction system has been constructed and is planned to be operated for 2 to 5 years. The soil bioremediation remedy has been completed. All soil cleanup components have been constructed. Air monitoring stations will be constructed.

Site Facts: In 1988, the EPA, the State, and potentially responsible parties entered into a Consent Decree. The Decree requires the parties to reimburse the Federal government for past cleanup costs and to perform and pay for future cleanup activities.

Environmental Progress



The removal of drums, soils, and storage tanks, construction of the dike, and connecting residents to the city water system have reduced the potential for exposure to contaminated materials at the Seymour Recycling Corporation site. Ongoing cleanup actions continue to reduce contamination levels in the soil and groundwater.

Site Repository



Jackson County Public Library, 2nd & Walnut Streets, Seymour, IN 47274

SOUTHSIDE SANITARY LANDFILL INDIANA

EPA ID# IND980607360



EPA REGION 5

Marion County
Southwest of Indianapolis

Other Names:
Southside Sanitary
Disposal & Transfer Co., Inc.

Site Description

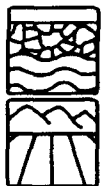
The 160-acre Southside Sanitary Landfill is an active solid waste disposal facility that began landfilling activities in 1971. In 1974, the 34 acres on the northern side of the site were licensed by the County and the State for disposal of solid wastes. After the first excavated area was filled by dumping refuse and covered with a layer of dirt, a second area was excavated 150 feet to the south. After these areas were filled, the land between the two was excavated. In 1975, the site was expanded to 160 acres. An estimated 4 million cubic yards of waste including coal tar, asbestos, iron oxide and clarifier sludges, and paint waste have been buried at the landfill. Access to the site is restricted. Approximately 7,200 people, within 3 miles of the site, use groundwater for drinking water supplies. The distance from the site to the nearest residence is 1/2 mile. Approximately 2,000 private wells are located within 3 miles of the site. Nearby Eagle Creek, White River, and Fall River are used for recreational activities.

Site Responsibility: This site is being addressed through Federal, State, and potentially responsible parties' actions.

NPL LISTING HISTORY

Proposed Date: 06/10/86
Final Date: 03/31/89

Threats and Contaminants



Groundwater is contaminated with heavy metals including arsenic, chromium, cadmium, and nickel. On-site soils are contaminated with polycyclic aromatic hydrocarbons (PAHs). Potential health threats to people include coming in direct contact with or accidentally ingesting contaminated groundwater or soil.

Cleanup Approach

This site is being addressed in two stages: initial actions and a long-term remedial phase focusing on cleanup of the entire site.

Response Action Status



Initial Actions: In 1988, the operators of the Southside Landfill constructed a leachate collection system and an underground slurry wall to control the migration of contaminated groundwater.



Entire Site: The owners/operators of the Southside Landfill, under State monitoring, currently are conducting an investigation into the nature and extent of contamination at the site. The investigation is defining the contaminants and will result in the selection of the final cleanup remedies. The investigation is scheduled to be completed in the winter of 1993.

Site Facts: In 1986, the State and Southside Landfill entered into an agreement, requiring that the company construct a leachate collection system and an underground slurry wall to control the migration of groundwater.

Environmental Progress



The construction of a leachate collection system and underground slurry wall has prevented the migration of contaminated groundwater at the Southside Sanitary Landfill site while studies are taking place and final cleanup activities are being planned.

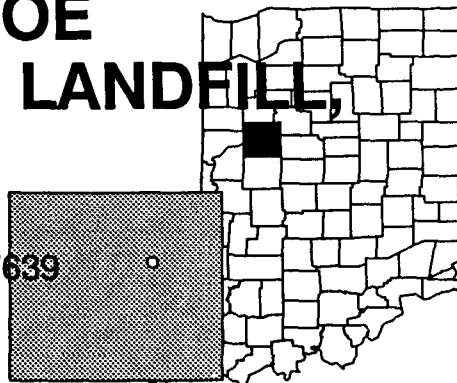
Site Repository



Indianapolis Public Library, 40 East St. Clair Street, Indianapolis, IN 46204

TIPPECANOE SANITARY LANDFILL, INC. INDIANA

EPA ID# IND980997639



EPA REGION 5

Tippecanoe County
Lafayette

Site Description

In 1971, the 70-acre Tippecanoe Sanitary Landfill received a permit from the State. The principal wastes disposed of at the site have been garbage and refuse generated by the local residents, businesses, and industries. Some out-of-state wastes have also been sent there. In 1979, ALCOA advised the State that the sludge material that it had been sending to the landfill since 1973 had been found to contain significant levels of polychlorinated biphenyls (PCBs). Disposal of the sludge ceased, but considerable quantities had already been deposited at the site. The Indiana State Board of Health has verified groundwater contamination at the site. In 1989, the facility discontinued accepting wastes. Approximately 81,000 people obtain drinking water from public and private wells within 3 miles of the site.

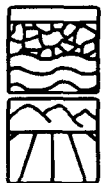
Site Responsibility: This site is being addressed through Federal, State, and potentially responsible parties' actions.

NPL LISTING HISTORY

Proposed Date: 06/24/88

Final Date: 08/30/90

Threats and Contaminants



The groundwater is contaminated with volatile organic compounds (VOCs). Sludge buried at the site contains PCBs. The contaminated groundwater is a potential health threat to individuals if it is accidentally directly contacted or swallowed.

Cleanup Approach

This site is being addressed in a single long-term remedial phase focusing on cleanup of the entire site.

Response Action Status



Entire Site: Some of the parties potentially responsible for site contamination agreed to conduct an investigation to determine the nature and extent of contamination and to identify alternative cleanup actions. The work plan for the investigation was approved and field work began in 1991. Completion of the study is scheduled for early 1994.

Site Facts: A Consent Decree signed in 1988 ordered the owner to close the landfill by October 1989 and install a cover over the wastes. The owner filed for bankruptcy in 1989, and the cover was not fully installed. In March 1990, the EPA, the Indiana Department of Environmental Management, and 10 of the potentially responsible parties signed a Consent Order, requiring the parties to conduct site investigations.

Environmental Progress



After proposing this site to the NPL, the EPA performed preliminary investigations and determined that no immediate actions were required at the Tippecanoe Sanitary Landfill site while studies are conducted and cleanup activities are being planned.

Site Repository



Tippecanoe County Public Library, 627 South Street, Lafayette, IN 47901

TRI-STATE PLATING INDIANA

EPA ID# IND006038764



EPA REGION 5

Bartholomew County
Columbus

Site Description

For approximately 35 years prior to 1981, the Tri-State Plating site was used by Hull Industries and Quality Plating Service Company. The site covers an area of approximately 16,000 square feet. In 1981, Tri-State Plating purchased the facility and began an electroplating operation. Contamination problems first were detected at the site when the Bartholomew County Health Department and the Indiana State Board of Health (ISBH) inspected the site and found that soils contained high concentrations of cyanide and other heavy metals. In 1984, after finding that Tri-State Plating was discharging contaminated wastewater, the City of Columbus instructed the company to install a treatment system to control contaminated wastewater discharges to the city's sewers. Later in 1984, when a treatment system was not installed, the city blocked off sewers leading from the Tri-State Plating facility and shut off the company's water supply. Tri-State Plating discontinued operations in 1984. The nearest residence is adjacent to the site boundary. The City of Columbus has approximately 30,000 people, some of whom are served by a well field located near the site.

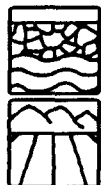
Site Responsibility: This site is being addressed through Federal actions.

NPL LISTING HISTORY

Proposed Date: 09/18/85

Final Date: 06/10/86

Threats and Contaminants



The groundwater is contaminated with chromium. The soil was contaminated with heavy metals including cadmium, chromium, copper, lead, nickel, and arsenic. The contaminated groundwater could be hazardous to the health of individuals if it is accidentally touched or swallowed before cleanup is completed. Haw Creek and the White River, which are located nearby, had a potential of being contaminated by the hazardous materials present at the site.

Cleanup Approach

This site is being addressed in two stages: initial actions and a long-term remedial phase focusing on cleanup of the entire site.

Response Action Status



Initial Actions: In 1987, the EPA constructed a fence around the entire site and removed 27 barrels of waste to an off-site treatment facility. The EPA also took steps to decontaminate the electroplating process building and storage shed. In addition, a trench at the main electroplating process building and contaminated surface soil were excavated and disposed of at an off-site landfill. After the soil was removed, the EPA covered excavated areas with clean soil. These actions have eliminated the sources of soil contamination. In 1989, the EPA took the following actions to remove the contaminants from the site: decontaminated the walls and ceilings of the main process building and demolished the building; transported the building debris to an off-site landfill; excavated contaminated soil and the contaminated building foundation and disposed of excavated material at an off-site waste landfill; and filled the excavated areas with clean soil, graded the surface of the ground, and reseeded the graded area. Upon completion of these actions, the fence was removed.



Entire Site: The EPA completed an investigation in 1990 that determined the nature and extent of the site contamination and recommended that the contaminated groundwater be pumped and treated and then discharged to the publicly owned water treatment works. The pump and treat system design was approved in early 1991. Construction of the treatment system has been completed and groundwater pumping and treatment was initiated in early 1992. Groundwater treatment will continue until cleanup goals are met. During the course of the investigation and while demolishing the main building, the EPA found asbestos-bearing materials. These materials were removed and transferred to a licensed disposal facility.

Environmental Progress



Pumping and treating groundwater, excavating contaminated soils and debris, and demolishing the contaminated building have reduced the potential of exposure to contaminated materials at the Tri-State Plating site.

Site Repository

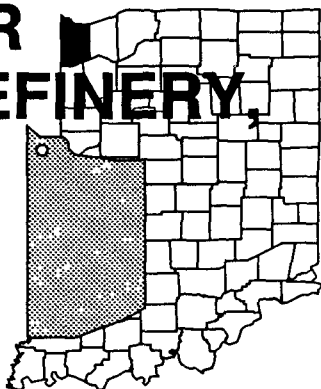


Bartholomew County Health Department, 440 3rd Street, Suite 303, Columbus, IN 47201

U.S. SMELTER AND LEAD REFINERY, INC.

INDIANA

EPA ID# IND047030226



EPA REGION 5

Lake County
East Chicago

Site Description

The former site of the U.S. Smelter and Lead Refinery, Inc. (USS Lead) operation is located on a 79-acre parcel of land in East Chicago, Indiana. The area is primarily industrial. The Indiana Harbor Belt Railroad is located to the north of the site, the East West Toll Road and the east branch of the Grand Calumet River to the south, Kennedy Avenue to the east, and Indiana Harbor Canal to the west. From 1906 to 1920, USS Lead operated primarily as a copper smelter. In 1920 the company added a primary lead smelter to its operation. USS Lead converted to secondary smelting in 1973, recovering lead from scrap metal and old automobile batteries. All operations were discontinued in 1985. Two primary waste materials were generated as a result of the smelting operations: blast furnace slag and lead-containing dust emitted by the blast furnace stack. Blast furnace slag was stockpiled south of the plant building and once a year spread over an adjoining 21 acres of wetlands. The lead-containing dust was originally trapped in bag filters and stored in a three to five acre area for future recycling. In 1973 a larger blast furnace was installed to recycle both new and stockpiled dust. Significant amounts of the dust were later contained in a building to prevent dispersion. However, dust has spread throughout the building with increasing dilapidation. Substantial amounts of dust remain on site. In 1975 and 1985, USS Lead received a National Pollutant Discharge Elimination System (NPDES) permit to discharge furnace cooling water and storm water run-off to the Grand Calumet River. According to the Indiana Department of Environmental Management (IDEM), permit levels were exceeded for several materials. In the 1980s, several State and Federal enforcement actions were taken against the company. As a result of the permit violations and the dumping of slag water into the wetlands, nearby surface waters are contaminated. In September 1985, the Indiana State Board of Health (ISBH) found USS Lead in violation of State law because lead particles were found downwind of the site. Approximately 4.1 million people draw drinking water from intakes primarily into Lake Michigan, which is 15 miles downstream of where hazardous substances from the site enter surface water. Lake Michigan, the Grand Calumet River and Indiana Harbor Canal are nearby fishing areas. The Grand Calumet River Natural Area, located a quarter mile southeast of the site, has two endangered species. Hammond Beach Marina is four miles west of where the canal enters Lake Michigan. Lake Michigan, Wahala Beach and several other major recreation areas are within 15 miles of the site. Seventy five hundred people work or attend school within two miles of the site.

Site Responsibility: This site is being addressed through Federal actions.

NPL Listing History:
Proposed Date: 02/07/92

Threats and Contaminants



Elevated levels of lead exist in the blast furnace slag. Substantial amounts of lead-containing dust have permeated the building, contaminating the structure and surrounding soils. According to IDEM, the permit levels for lead, cadmium, copper, arsenic and zinc over the years were exceeded. These permit violations as well as the dumping of blast furnace slag water into wetlands have led to surface water contamination. In addition, air is contaminated with lead particles downwind of the site.

Cleanup Approach

This site is planned to be addressed through a long-term remedial action focusing on cleanup of the entire site.

Response Action Status



Entire Site: A comprehensive investigation into the nature and extent of contamination at the site is scheduled to begin in early 1993. Cleanup remedies will be selected based on the result of this investigation.

Site Facts: In the 1980's, several State and Federal enforcement actions were taken against USS Lead for permit violations. In April of 1990, IDEM drafted a Partial Interim Agreement Order mandating that USS Lead develop a site cleanup plan. USS Lead's parent company, Sharon Steel Corp., offered to lend USS Lead the funds to comply with the cleanup requirements. Sharon Steel, however, subsequently filed for bankruptcy under Chapter 11 of the Federal Bankruptcy Code.

Environmental Progress



Initial investigations indicate the U.S. Smelter and Lead Refinery, Inc. site poses no immediate threat to the health and safety of the nearby population while the site awaits additional investigations.

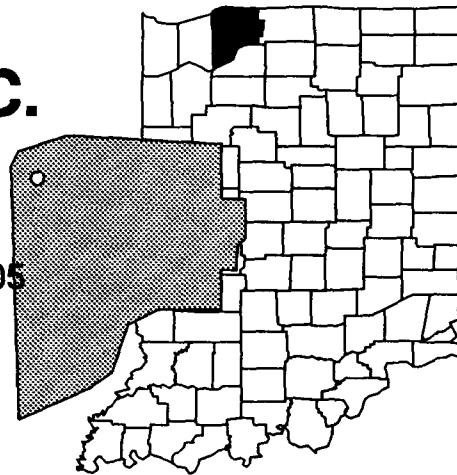
Site Repository



Not established.

WASTE, INC. LANDFILL INDIANA

EPA ID# IND980504005



EPA REGION 5
Laporte County
Michigan City

Site Description

The Waste, Inc. Landfill in Michigan City is composed of 32 acres situated on a former wetland area. From 1966 to 1982, the landfill accepted approximately 128,000 tons of industrial wastes. The landfill was unlined, and there were no dikes to control runoff. Originally, the site sloped down to a creek, but now the landfill rises 50 feet above the surrounding terrain. In 1983, the site was sampled by the EPA, and heavy metals, polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), and other organic compounds were found in the sediment of Trail Creek, which borders the landfill. Approximately 11,300 people live within a mile of the site, and about 2,100 people depend on private wells within 3 miles of the site for their drinking water. The site drains into Trail Creek, which is used for recreational purposes and discharges to Lake Michigan. The Michigan City Water Works, serving approximately 32,000 people, draws water from intakes in Lake Michigan less than 3 miles downstream from the site.

Site Responsibility: This site is being addressed through Federal and potentially responsible parties' actions.

NPL LISTING HISTORY
Proposed Date: 04/10/85
Final Date: 07/21/87

Threats and Contaminants



Groundwater and soils may be contaminated with volatile organic compounds (VOCs), PCBs, PAHs, various phthalates, and heavy metals. Sediments in Trail Creek contain heavy metals including arsenic, lead, and manganese; PAHs; PCBs; and other organic compounds. People may be exposed to contaminants by accidentally ingesting or coming in direct contact with contaminated soil, leachate, groundwater, surface water, or sediment. Eating fish, waterfowl, or locally grown vegetables containing accumulated contaminants may pose a health hazard.

Cleanup Approach

The site is being addressed in a long-term remedial phase focusing on cleanup of the entire site.

Response Action Status



Entire Site: The parties potentially responsible for the contamination at the site are conducting an investigation, under EPA supervision, to determine the type and extent of contamination. All sampling is complete. The investigative report defining the nature and extent of contamination is being finalized. Currently, the EPA is evaluating various cleanup alternatives and is expected to select final cleanup remedies by late 1992.

Site Facts: Under a Consent Order with the EPA, signed on March 31, 1987, nine potentially responsible parties agreed to undertake the investigation of the site contamination.

Environmental Progress



After listing the Waste, Inc. Landfill on the NPL, the EPA performed preliminary evaluations and determined that the site does not pose an immediate threat to the surrounding communities or the environment while the investigations leading to the selection of final cleanup remedies are taking place.

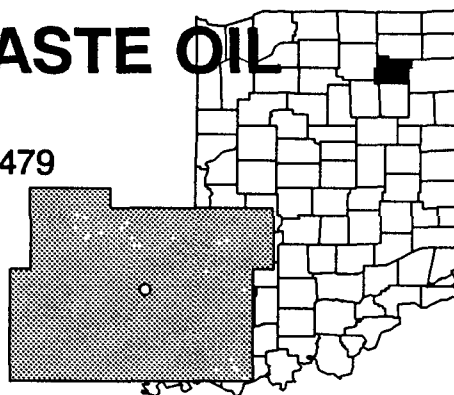
Site Repository



Michigan City Public Library, 100 East 4th Street, Michigan City, IN 46460

WAYNE WASTE OIL INDIANA

EPA ID# IND048989479



EPA REGION 5

Whitley County
Columbia City

Other Names:

Wayne Reclamation and Recycling
(WRR)

Site Description

The Wayne Waste Oil site is located on 35 acres in Columbia City. Wayne Waste Oil, a division of Wayne Reclamation and Recycling, Inc., deposited about a million gallons of oil waste on this site from 1975 to 1980. During its period of operation, oil wastes were disposed of on site by dumping them on surface soils, into unlined pits, and into a trench. The Indiana State Board of Health investigated the facility in 1980 and found hazardous wastes that were illegally deposited. As a result, the owner was ordered by the State of Indiana to clean up the site. The site contained opened, leaking drums, waste areas covered with sands, and disposal ponds. The area surrounding the site is used for residential, commercial, and agricultural purposes. The population of Columbia City was estimated to be 5,100 in 1988. All residences are connected to the municipal water supply.

Site Responsibility: This site is being addressed through Federal, State, and potentially responsible parties' actions.

NPL LISTING HISTORY

Proposed Date: 12/30/82

Final Date: 09/08/83

Threats and Contaminants



Groundwater contains volatile organic compounds (VOCs) including benzene, trichloroethylene (TCE), and toluene and heavy metals including arsenic, barium, lead, and cyanide. Soil contains polycyclic aromatic hydrocarbons (PAHs), VOCs, heavy metals, phenols, and phthalates. On-site ponds and the adjacent Blue River contain cyanide, copper, and TCE. Currently, the city wells, which are located at the northern boundary of the site, are not contaminated. If migration of site-related contaminants through groundwater occurs, area residents could be exposed to these pollutants when consuming or using drinking water. On-site trespassers and workers could be exposed to site-related contaminants when coming into direct contact with the contaminated soils. The Blue River borders the site on two sides, and since no significant barrier between the site and the river exists, site-related contaminants in groundwater, surface water, and soils could migrate into the river.

Cleanup Approach

The site is being addressed in two stages: immediate actions and a long-term remedial phase directed at cleanup of the entire site.

Response Action Status



Immediate Actions: In 1986, the potentially responsible parties, under EPA monitoring, excavated 7,500 tons of contaminated soil in the oil decanting pit, the tar pit, and the sludge ravine and disposed of it in a federally approved facility.

Over 200 drums and soil from the buried barrel area were removed and disposed of off site. This area was then backfilled. In 1988, the parties excavated approximately 5,400 tons of contaminated soil from the discolored area, the acid pit, the ink sludge area, and the sludge ravine and disposed of the soil in a federally approved facility. An additional 125 drums were removed, as well as the contents of 23 horizontal tanks. A fence was constructed around the oil decanting pit, the sludge ravine, and the discolored area. The acid pit and the ink sludge areas were backfilled with off-site fill material. Four drums were left on site after these operations ceased in 1988 because of the difficulties involved with moving them. The remaining drums were removed from the site in 1989.



Entire Site: The EPA began an investigation into the nature and extent of site contamination in 1985. The parties potentially responsible for site contamination completed the effort under EPA supervision. The remedy selected by the EPA in early 1990 includes: constructing, operating, and maintaining a soil vapor extraction system in the VOC-contaminated soil areas; delineating and cleaning the lead-contaminated soils by soil washing or immobilization/stabilization technologies; constructing, operating, and maintaining a groundwater extraction, treatment (air stripping), and discharge system; delineating the extent of the municipal landfill; constructing and maintaining a cap over the municipal landfill; covering PAH-contaminated soil or consolidating the soil under the municipal landfill cap; removing and treating the contents of all above-ground and underground tanks, and delineating the extent of contamination due to spills or leaks associated with the tanks; removing and disposing of site debris; installing an upgraded security fence around the site; monitoring the groundwater and the air; and implementing deed restrictions to ensure protection of the municipal landfill cap. The potentially responsible parties, under EPA monitoring, began designing the technical specifications in late 1991. Once the design phase is completed the cleanup activities will begin, which currently are scheduled for mid-1993.

Site Facts: In 1986, the EPA and the potentially responsible parties entered into an Administrative Order on Consent, under which the parties removed contaminated soil, drums, and tanks from the site. The EPA issued a Unilateral Administrative Order to five parties potentially responsible for the site contamination in 1988. The purpose of this Order was to compel these parties to remove additional drums, soils, debris, and tank contents.

Environmental Progress



The removal of the contaminated soils and drums from the site and the construction of security fences around the areas of greatest contamination have reduced the potential for direct exposure to hazardous materials at the Wayne Waste Oil site while the specifications for the selected cleanup remedy are completed and the actual cleanup activities are started.

Site Repository



Peabody Library, 203 North Main Street, Columbia City, IN 46725

WEDZEB ENTERPRISES, INC. INDIANA

EPA ID# IND980794374



EPA REGION 5

Boone County
Lebanon

Site Description

The Wedzeb Enterprises, Inc. site is situated on 3/4 acre and in Lebanon, about 30 miles northwest of Indianapolis. The site was owned by a succession of businesses prior to the late 1970s, when Wedzeb Enterprises, Inc. purchased it. Operating practices at Wedzeb consisted of buying used electrical equipment for resale and storing it on site in two warehouses. Various types of electrical equipment including electrical capacitors and transformers containing polychlorinated biphenyls (PCBs) were stored on site. A fire that completely destroyed one of the warehouses on the eastern side occurred at the Wedzeb Enterprises, Inc. site in 1981. According to inventory records, this warehouse had contained 77 tons of electrical capacitors, some of which exploded during the fire. The water used to put out the fire mixed with contaminants from the capacitors and subsequently dripped onto the ground and flowed into a sanitary sewer line. PCBs may have been released into the environment as a result of the fire, and contaminants may have been washed to nearby ground surfaces as the fire was extinguished. Because of the potential health threat to nearby residents caused by harmful chemicals, the Indiana State Board of Health and the EPA collected samples in 1981 of on-site soil and debris, as well as soot, wastewater, and sanitary sewer sediment from areas located near the site. The results of these sampling activities showed concentrations of PCBs in sediment from the sanitary sewage treatment plant, as well as traces of dioxins and furans in the sediment and other soil samples from locations on and near the site. The EPA and the Indiana Environmental Management Board requested a cleanup plan from Wedzeb Enterprises, Inc. in 1982, but the company failed to submit one until 1985. Approximately 11,455 people live within a 3-mile radius of the site, and about 300 homes are located within 500 feet of the site. There are approximately 300 private wells and two municipal wells within the vicinity of the site. These wells were not threatened by site contamination.

Site Responsibility: This site was addressed through Federal and State actions.

NPL LISTING HISTORY

Proposed Date: 12/30/82

Final Date: 09/08/83

Deletion Date: 09/10/91

Threats and Contaminants



Groundwater contains low levels of dioxins and furans that do not pose a risk to people or the environment. On-site sediments and sediments located in the sanitary sewer pipeline system near the site were contaminated with PCBs, dioxins, and furans. Soils contained low levels of PCBs, dioxins, furans, and other organic compounds. Low levels of PCBs were found in the interior warehouse surface samples. The site is now clean, and there is no threat to public health or the environment.

Cleanup Approach

The site was addressed in two stages: immediate actions and a long-term remedial phase focusing on cleanup of the entire site.

Response Action Status



Immediate Actions: Wedzeb Enterprises, Inc. installed a fence and a windbreak around the site in 1985 to minimize migration of dust off site. The EPA removed 50 boxes containing contaminated on-site surface soils and debris from the area surrounding the warehouse on the eastern part of the site in 1987. The contaminated soils and debris were shipped to an EPA-approved disposal facility. The contaminated soil subsequently was replaced with clean fill. More than 250 drums of 3-pound capacitors were shipped off site for incineration.



Entire Site: The work plan for long-term cleanup of the sewers and soils was completed and approved by the EPA, and cleanup work began on the site in 1990. The EPA selected the following methods to address site contamination: cleaning the sewer lines with hydraulic jets and vacuum pumping to remove contaminants; inspection of the sewer pipe; disposal or incineration of contaminated sediments; filtering sewer sediments and discharging clean water to the publicly owned treatment works; and removal and disposal of the wastes generated by the investigation into the nature and extent of contamination at the site. Cleanup activities were completed in late 1990, and the EPA deleted the site from the NPL in 1991.

Site Facts: The EPA and the State of Indiana made repeated attempts to compel Wedzeb Enterprises, Inc., the party potentially responsible for site contamination, to clean up the site between 1981 and 1985. Further enforcement efforts resulted in Wedzeb Enterprises, Inc. submitting a cleanup plan for the site in 1985; however, Wedzeb Enterprises, Inc. never initiated cleanup activities due to financial difficulties.

Environmental Progress



All cleanup activities have been completed at the Wedzeb Enterprises, Inc. site. The EPA deleted the site from the NPL in 1991.

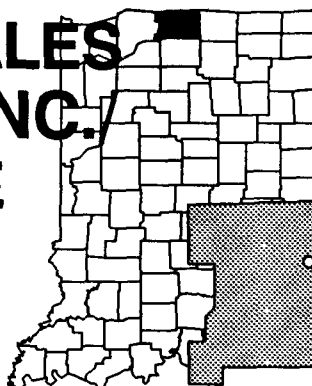
Site Repository



Lebanon Public Library, 104 East Washington Street, Lebanon, IN 46052

WHITEFORD SALES AND SERVICE INC./ NATIONALEASE INDIANA

EPA ID# IND980999791



EPA REGION 5

St. Joseph County
South Bend

Other Names:
National Lease

Site Description

The Whiteford Sales and Service Inc./NationalLease site covers approximately 8 acres on Sample Street in South Bend, Indiana. The site operated as Whiteford Sales and Services from 1960 to 1980 and as National Lease from 1980 to 1983. Both companies leased trucks and semitrailers. In 1980, St. Joseph County purchased the property from Whiteford Trucking; Whiteford then leased the property and structures from the County until 1983. Upon acquiring the property, the County began the demolition of all structures and construction of an overpass. During the excavation process, three dry wells were uncovered. It was later learned that unknown quantities of degreasing solvents and sludges, resulting from the cleaning of trucks and trailers, had been deposited into these three unlined dry wells, each approximately 6 feet in diameter and 6 feet deep. Tests conducted by the St. Joseph County Health Department found on-site soils to be contaminated with organic and inorganic compounds. The Whiteford site lies in an industrial area; however, residences are located approximately 1,000 feet due north of the site. There are approximately 10,000 people living within a 1-mile radius of the site. Approximately 237,000 people draw drinking water from public wells within 3 miles of the site. In 1980, the Olive Street Well Field, part of the municipal water system located west of the Whiteford Site, was shut down because of the presence of organic chemicals in the well water.

Site Responsibility: This site is being addressed through Federal actions.

NPL LISTING HISTORY

Proposed Date: 06/24/88

Final Date: 08/30/90

Threats and Contaminants



Groundwater off site was found to contain carbon tetrachloride, a substance used in dry cleaning operations, other volatile organic compounds (VOCs) including trichloroethylene (TCE), and vinyl chloride. Soils and sludges on site were found to be contaminated with heavy metals including arsenic, barium, cadmium, and chromium, and with VOCs. There is a potential for the migration of contaminated groundwater to the nearby municipal well field. If people should come in direct contact with or accidentally ingest the contaminated groundwater, they may be at risk. In addition, people who come into direct contact with or accidentally ingest contaminated soil may suffer adverse health effects.

Cleanup Approach

The site is being addressed in two stages: an initial action and a long-term remedial phase focusing on cleanup of the entire site.

Response Action Status



Initial Action: Cleanup of the Whiteford property was initiated. Three dry wells, in addition to a limited amount of contaminated soils, were removed and taken to a State-permitted sanitary landfill.



Entire Site: EPA is investigating the type and extent of contamination at the site. The field work has been completed and a report detailing the alternatives for cleaning up the site is currently being prepared. The final selection of the cleanup strategy for the site is expected in late 1993.

Environmental Progress



The removal of the contaminated dry wells and some of the contaminated soils from the Whiteford Sales and Service Inc./NationaLease site has reduced the potential for exposure to hazardous materials while the investigations leading to the selection of the final cleanup remedies are taking place.

Site Repository



St. Joseph County Public Library, 122 West Wayne Street, South Bend, IN 46601

GLOSSARY

Terms Used in the NPL Book

This glossary defines terms used throughout the NPL Volumes. The terms and abbreviations contained in this glossary apply specifically to work performed under the Superfund program in the context of hazardous waste management. These terms may have other meanings when used in a different context. A table of common toxic chemicals found at NPL sites, their sources, and their potential threats is located on page G-15

Acids: Substances, characterized by low pH (less than 7.0), that are used in chemical manufacturing. Acids in high concentration can be very corrosive and react with many inorganic and organic substances. These reactions possibly may create toxic compounds or release heavy metal contaminants that remain in the environment long after the acid is neutralized.

Administrative Order On Consent: A legal and enforceable agreement between the EPA and the parties potentially responsible for site contamination. Under the terms of the Order, the potentially responsible parties (PRPs) agree to perform or pay for site studies or cleanups. It also describes the oversight rules, responsibilities, and enforcement options that the government may exercise in the event of non-compliance by potentially responsible parties. This Order is signed by PRPs and the government; it does not require approval by a judge.

Administrative Order [Unilateral]: A legally binding document issued by the EPA, directing the parties potentially responsible to perform site cleanups or studies (generally, the EPA does not issue Unilateral Orders for site studies). This type of Order is not signed by the PRPs and does not require approval by a judge.

Aeration: A process that promotes breakdown of contaminants in soil or water by exposing them to air.

Agency for Toxic Substances and Disease Registry (ATSDR): The Federal agency within the U.S. Public Health Service charged with carrying out the health-related responsibilities of CERCLA.

Air Stripping: A process whereby volatile organic chemicals (VOCs) are removed from contaminated material by forcing a stream of air through the contaminated material in a pressurized vessel. The contaminants are evaporated into the air stream. The air may be further treated before it is released into the atmosphere.

Ambient Air: Any unconfined part of the atmosphere. Refers to the air that may be inhaled by workers or residents in the vicinity of contaminated air sources.

Applicable or Relevant and Appropriate Requirements (ARARs): Federal, State, or local laws which apply to Superfund activities at NPL sites. Both emergency and long-term actions must comply with these laws or provide sound reasons for allowing a waiver. ARARs must be identified for each site relative to the characteristics of the site, the substances found at the site, or the cleanup alternatives being considered for the site.

GLOSSARY

Aquifer: An underground layer of rock, sand, or gravel capable of storing water within cracks and pore spaces, or between grains. When water contained within an aquifer is of sufficient quantity and quality, it can be tapped and used for drinking or other purposes. The water contained in the aquifer is called groundwater. A "sole source aquifer" supplies 50 percent or more of the drinking water of an area.

Artesian (Well): A well made by drilling into the earth until water is reached, which, due to internal pressure, flows up like a fountain.

Asbestos: A mineral fiber that can pollute air or water and is known to cause cancer or asbestosis when inhaled.

Attenuation: The naturally occurring process by which a compound is reduced in concentration over time through adsorption, degradation, dilution, or transformation.

Background Level: The amount of a substance typically found in the air, water, or soil from natural, as opposed to human, sources.

Baghouse Dust: Dust accumulated in removing particulates from the air by passing it through cloth bags in an enclosure.

Bases: Substances characterized by high pH (greater than 7.0), which tend to be corrosive in chemical reactions. When bases are mixed with acids, they neutralize each other, forming salts.

Berm: A ledge, wall, or a mound of earth used to prevent the migration of contaminants.

Bioaccumulate: The process by which some contaminants or toxic chemicals gradually collect and increase in concentration in living tissue, such as in plants, fish, or people, as they breathe contaminated air, drink contaminated water, or eat contaminated food.

Biological Treatment: The use of bacteria or other microbial organisms to break down toxic organic materials into carbon dioxide and water.

Bioremediation: A cleanup process using naturally occurring or specially cultivated microorganisms to digest contaminants and break them down into non-hazardous components.

Bog: A type of wetland that is covered with peat moss deposits. Bogs depend primarily on moisture from the air for their water source, are usually acidic, and are rich in plant residue [see Wetland].

Boom: A floating device used to contain oil floating on a body of water or to restrict the potential overflow of waste liquids from containment structures.

Borehole: A hole that is drilled into the ground and used to sample soil or ground-water.

Borrow Pit: An excavated area where soil, sand, or gravel has been dug up for use elsewhere.

Cap: A layer of material, such as clay or a synthetic material, used to prevent rainwater from penetrating and spreading contaminated materials. The surface of the cap generally is mounded or sloped so water will drain off.

Carbon Adsorption: A treatment system in which contaminants are removed from ground-water and surface water by forcing water through tanks containing activated carbon, a specially treated material that attracts and holds or retains contaminants.

Carbon Disulfide: A degreasing agent formerly used extensively for parts washing. This compound has both inorganic and organic

properties, which increase cleaning efficiency. However, these properties also cause chemical reactions that increase the hazard to human health and the environment.

Carbon Treatment: [see Carbon Adsorption].

Cell: In solid waste disposal, one of a series of holes in a landfill where waste is dumped, compacted, and covered with layers of dirt.

CERCLA: [see Comprehensive Environmental Response, Compensation, and Liability Act].

Characterization: The sampling, monitoring, and analysis of a site to determine the extent and nature of toxic releases. Characterization provides the basis for acquiring the necessary technical information to develop, screen, analyze, and select appropriate cleanup techniques.

Chemical Fixation: The use of chemicals to bind contaminants, thereby reducing the potential for leaching or other movement.

Chromated Copper Arsenate: An insecticide/herbicide formed from salts of three toxic metals: copper, chromium, and arsenic. This salt is used extensively as a wood preservative in pressure-treating operations. It is highly toxic and water-soluble, making it a relatively mobile contaminant in the environment.

Cleanup: Actions taken to eliminate a release or threat of release of a hazardous substance. The term "cleanup" sometimes is used interchangeably with the terms remedial action, removal action, response action, or corrective action.

Closure: The process by which a landfill stops accepting wastes and is shut down under Federal

guidelines that ensure the protection of the public and the environment.

Comment Period: A specific interval during which the public can review and comment on various documents and EPA actions related to site cleanup. For example, a comment period is provided when the EPA proposes to add sites to the NPL. Also, there is minimum 3-week comment period for community members to review and comment on the remedy proposed to clean up a site.

Community Relations: The EPA effort to establish and maintain two-way communication with the public. The goals of community relations programs include creating an understanding of EPA programs and related actions, assuring public input into decision-making processes related to affected communities, and making certain that the Agency is aware of, and responsive to, public concerns. Specific community relations activities are required in relation to Superfund cleanup actions [see Comment Period].

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA): Congress enacted the CERCLA, known as Superfund, in 1980 to respond directly to hazardous waste problems that may pose a threat to the public health and the environment. The EPA administers the Superfund program.

Confluence: The place where two bodies of water, such as streams or rivers, come together.

Confined Aquifer: An aquifer in which groundwater is confined under pressure that is significantly greater than atmospheric pressure.

GLOSSARY

Consent Decree: A legal document, approved and issued by a judge, formalizing an agreement between the EPA and the parties potentially responsible for site contamination. The decree describes cleanup actions that the potentially responsible parties are required to perform, or the costs incurred by the government that the parties will reimburse, and the roles, responsibilities, and enforcement options that the government may exercise in the event of non-compliance by potentially responsible parties. If a settlement between the EPA and a potentially responsible party includes cleanup actions, it must be in the form of a Consent Decree. A Consent Decree is subject to a public comment period.

Consent Order: [see Administrative Order on Consent].

Containment: The process of enclosing or containing hazardous substances in a structure, typically in a pond or a lagoon, to prevent the migration of contaminants into the environment.

Contaminant: Any physical, chemical, biological, or radiological material or substance whose quantity, location, or nature produces undesirable health or environmental effects.

Contingency Plan: A document setting out an organized, planned, and coordinated course of action to be followed in case of a fire, explosion, or other accident that releases toxic chemicals, hazardous wastes, or radioactive materials into the environment.

Cooperative Agreement: A contract between the EPA and the States, wherein a State agrees to manage or monitor certain site cleanup responsibilities and other activities on a cost-sharing basis.

Cost Recovery: A legal process by which potentially responsible parties can be required to pay back the Superfund program for money

it spends on any cleanup actions [see Potentially Responsible Parties].

Cover: Vegetation or other material placed over a landfill or other waste material. It can be designed to reduce movement of water into the waste and to prevent erosion that could cause the movement of contaminants.

Creosotes: Chemicals used in wood preserving operations and produced by distillation of tar, including polycyclic aromatic hydrocarbons and polynuclear aromatic hydrocarbons [see PAHs and PNAs]. Contaminating sediments, soils, and surface water, creosotes may cause skin ulcerations and cancer through prolonged exposure.

Culvert: A pipe used for drainage under a road, railroad track, path, or through an embankment.

Decommission: To revoke a license to operate and take out of service.

Degradation: The process by which a chemical is reduced to a less complex form.

Degrease: To remove grease from wastes, soils, or chemicals, usually using solvents.

Deletion: A site is eligible for deletion from the NPL when Superfund response actions at the site are complete. A site is deleted from the NPL when a notice is published in the Federal Register.

De minimis: This legal phrase pertains to settlements with parties who contributed small amounts of hazardous waste to a site. This process allows the EPA to settle with small, or *de minimis* contributors, as a single group rather than as individuals, saving time, money, and effort.

Dewater: To remove water from wastes, soils, or chemicals.

GLOSSARY

Dike: A low wall that can act as a barrier to prevent a spill from spreading.

Dioxin: An organic chemical by-product of pesticide manufacture which is known to be one of the most toxic man-made chemicals.

Disposal: Final placement or destruction of toxic, radioactive, or other wastes; surplus or banned pesticides or other chemicals; polluted soils; and drums containing hazardous materials. Disposal may be accomplished through the use of approved secure landfills, surface impoundments, land farming, deep well injection, or incineration.

Downgradient: A downward hydrologic slope that causes groundwater to move toward lower elevations. Therefore, wells *downgradient* of a contaminated groundwater source are prone to receiving pollutants.

Ecological Assessment: A study of the impact of man-made or natural activity on living creatures and their environment.

Effluent: Wastewater, treated or untreated, that flows out of a treatment plant, sewer, or industrial outfall. Generally refers to wastes discharged into surface waters.

Emission: Pollution discharged into the atmosphere from smokestacks, other vents, and surface areas of commercial or industrial facilities.

Emulsifiers: Substances that help in mixing materials that do not normally mix; e.g., oil and water.

Endangerment Assessment: A study conducted to determine the risks posed to public health or the environment by contamination at NPL sites. The EPA or the State conducts the study when a legal action is to be taken to direct the potentially responsible parties to clean up a site or pay for the cleanup. An endangerment

assessment supplements an investigation of the site hazards.

Enforcement: EPA, State, or local legal actions taken against parties to facilitate settlements; to compel compliance with laws, rules, regulations, or agreements; or to obtain penalties or criminal sanctions for violations. Enforcement procedures may vary, depending on the specific requirements of different environmental laws and related regulatory requirements. Under CERCLA, for example, the EPA will seek to require potentially responsible parties to clean up a Superfund site or pay for the cleanup [see Cost Recovery].

Erosion: The wearing away of land surface by wind or water. Erosion occurs naturally from weather or surface runoff, but can be intensified by such land-related practices as farming, residential or industrial development, road building, or timber-cutting. Erosion may spread surface contamination to off-site locations.

Estuary (estuarine): Areas where fresh water from rivers and salt water from nearshore ocean waters are mixed. These areas may include bays, mouths of rivers, salt marshes, and lagoons. These water ecosystems shelter and feed marine life, birds, and wildlife.

Evaporation Ponds: Areas where sewage sludge or other watery wastes are dumped and allowed to dry out.

Feasibility Study: The analysis of the potential cleanup alternatives for a site. The feasibility study usually starts as soon as the remedial investigation is underway. In this volume, the feasibility study is referred to as a site study [see also Remedial Investigation].

GLOSSARY

Filtration: A treatment process for removing solid (particulate) matter from water by passing the water through sand, activated carbon, or a man-made filter. The process is often used to remove particles that contain contaminants.

Flood Plain: An area along a river, formed from sediment deposited by floods. Flood plains periodically are inundated by natural floods, which can spread contamination.

Flue Gas: The air that is emitted from a chimney after combustion in the burner occurs. The gas can include nitrogen oxides, carbon oxides, water vapor, sulfur oxides, particles, and many chemical pollutants.

Fly Ash: Non-combustible residue that results from the combustion of flue gases. It can include nitrogen oxides, carbon oxides, water vapor, sulfur oxides, as well as many other chemical pollutants.

French Drain System: A crushed rock drain system constructed of perforated pipes, which is used to drain and disperse wastewater.

Gasification (coal): The conversion of soft coal into gas for use as a fuel.

General Notice Letter: [See Notice Letter].

Generator: A facility that emits pollutants into the air or releases hazardous wastes into water or soil.

Good Faith Offer: A voluntary offer, generally in response to a Special Notice letter, made by a potentially responsible party, consisting of a written proposal demonstrating a potentially responsible party's qualifications and willingness to perform a site study or cleanup.

Groundwater: Water that fills pores in soils or openings in rocks to the point of saturation. In aquifers, groundwater occurs in sufficient

quantities for use as drinking and irrigation water and other purposes.

Groundwater Quality Assessment: The process of analyzing the chemical characteristics of groundwater to determine whether any hazardous materials exist.

Halogens: Reactive non-metals, such as chlorine and bromine. Halogens are very good oxidizing agents and, therefore, have many industrial uses. They are rarely found by themselves; however, many chemicals such as polychlorinated biphenyls (PCBs), some volatile organic compounds (VOCs), and dioxin are reactive because of the presence of halogens.

Hazard Ranking System (HRS): The principal screening tool used by the EPA to evaluate relative risks to public health and the environment associated with abandoned or uncontrolled hazardous waste sites. The HRS calculates a score based on the potential of hazardous substances spreading from the site through the air, surface water, or groundwater and on other factors such as nearby population. The HRS score is the primary factor in deciding if the site should be on the NPL.

Hazardous Waste: By-products of society that can pose a substantial present or potential hazard to human health and the environment when improperly managed. Hazardous waste possesses at least one of four characteristics (ignitability, corrosivity, reactivity, or toxicity), or appears on special EPA lists.

Heavy Metals: Metallic elements with high atomic weights, such as arsenic, lead, mercury, and cadmium. Heavy metals are very hazardous even at low concentrations and tend to accumulate in the food chain.

Herbicide: A chemical pesticide designed to control or destroy plants, weeds, or grasses.

Hot Spot: An area or vicinity of a site containing exceptionally high levels of contamination.

Hydrocarbons: Chemical compounds that consist entirely of hydrogen and carbon.

Hydrology: The properties, distribution, and circulation of water.

Hydrogeology: The geology of groundwater, with particular emphasis on the chemistry and movement of water.

Impoundment: A body of water or sludge confined by a dam, dike, floodgate, or other barrier.

Incineration: A group of treatment technologies involving destruction of waste by controlled burning at high temperatures, e.g., burning sludge to reduce the remaining residues to a non-burnable ash that can be disposed of safely on land, in some waters, or in underground locations.

Infiltration: The movement of water or other liquid down through soil from precipitation (rain or snow) or from application of wastewater to the land surface.

Influent: Water, wastewater, or other liquid flowing into a reservoir, basin, or treatment plant.

Injection Well: A well into which waste fluids are placed, under pressure, for purposes of disposal.

Inorganic Chemicals: Chemical substances of mineral origin, not of basic carbon structure.

Installation Restoration Program: The specially funded program established in 1978 under which the Department of Defense has been identifying and evaluating its hazardous waste sites and controlling the migration of hazardous contaminants from those sites.

Intake: The source from where a water supply is drawn, such as from a river or water body.

Interagency Agreement: A written agreement between the EPA and a Federal agency that has the lead for site cleanup activities, setting forth the roles and responsibilities of the agencies for performing and overseeing the activities. States often are parties to interagency agreements.

Interim (Permit) Status: Conditions under which hazardous waste treatment, storage, and disposal facilities, that were operating when regulations under the RCRA became final in 1980, are temporarily allowed by the EPA to continue to operate while awaiting denial or issuance of a permanent permit. The facility must comply with certain regulations to maintain interim status.

Lagoon: A shallow pond or liquid waste containment structure. Lagoons typically are used for the storage of wastewaters, sludges, liquid wastes, or spent nuclear fuel.

Landfarm: To apply waste to land or incorporate waste into the surface soil, such as fertilizer or soil conditioner. This practice commonly is used for disposal of composted wastes and sludges.

Landfill: A disposal facility where waste is placed in or on land. *Sanitary* landfills are disposal sites for non-hazardous solid wastes. The waste is spread in layers, compacted to the smallest practical volume, and covered with soil at the end of each operating day. *Secure chemical* landfills are disposal sites for hazardous waste. They are designed to minimize the chance of release of hazardous substances into the environment [see Resource Conservation and Recovery Act].

Leach, Leaching [v.t.]: The process by which soluble chemical components are dissolved and carried through soil by water or some other percolating liquid.

GLOSSARY

Leachate [n]: The liquid that trickles through or drains from waste, carrying soluble components from the waste.

Leachate Collection System: A system that gathers liquid that has leaked into a landfill or other waste disposal area and pumps it to the surface for treatment.

Liner: A relatively impermeable barrier designed to prevent leachate (waste residue) from leaking from a landfill. Liner materials include plastic and dense clay.

Long-term Remedial Phase: Distinct, often incremental, steps that are taken to solve site pollution problems. Depending on the complexity, site cleanup activities can be separated into several of these phases.

Long-term Response Action: An action which requires a continuous period of on-site activity before cleanup goals are achieved. These actions typically include the extraction and treatment of groundwater and monitoring actions.

Marsh: A type of wetland that does not contain peat moss deposits and is dominated by vegetation. Marshes may be either fresh or saltwater and tidal or non-tidal [see Wetland].

Migration: The movement of oil, gas, contaminants, water, or other liquids through porous and permeable soils or rock.

Mill Tailings: [See Mine Tailings].

Mine Tailings: A fine, sandy residue left from mining operations. Tailings often contain high concentrations of lead, uranium, and arsenic or other heavy metals.

Mitigation: Actions taken to improve site conditions by limiting, reducing, or controlling toxicity and contamination sources.

Modeling: A technique using a mathematical or physical representation of a system or theory that tests the effects that changes on system components have on the overall performance of the system.

Monitoring Wells: Special wells drilled at specific locations within, or surrounding, a hazardous waste site where groundwater can be sampled at selected depths and studied to obtain such information as the direction in which groundwater flows and the types and amounts of contaminants present.

National Priorities List (NPL): The EPA's list of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term cleanup under Superfund. The EPA is required to update the NPL at least once a year.

Natural Attenuation: [See Attenuation].

Neutrals: Organic compounds that have a relatively neutral pH, complex structure and, due to their organic bases, are easily absorbed into the environment. Water is the most commonly known neutral, however, naphthalene, pyrene, and trichlorobenzene also are examples of neutrals.

Nitroaromatics: Common components of explosive materials, which will explode if activated by very high temperatures or pressures; 2,4,6-Trinitrotoluene (TNT) is a nitroaromatic.

Notice Letter: A General Notice Letter notifies the parties potentially responsible for site contamination of their possible liability. A Special Notice Letter begins a 60-day formal period of negotiation during which the EPA is not allowed to start work at a site or initiate enforcement actions against potentially responsible parties, although the EPA may undertake certain investigatory and planning activities.

The 60-day period may be extended if the EPA receives a good faith offer from the PRPs within that period. [See also Good Faith Offer].

On-Scene Coordinator (OSC): The predesignated EPA, Coast Guard, or Department of Defense official who coordinates and directs Superfund removal actions or Clean Water Act oil- or hazardous-spill corrective actions.

Operation and Maintenance: Activities conducted at a site after a cleanup action is completed to ensure that the cleanup or containment system is functioning properly.

Organic Chemicals/Compounds: Chemical substances containing mainly carbon, hydrogen, and oxygen.

Outfall: The place where wastewater is discharged into receiving waters.

Overpacking: Process used for isolating large volumes of waste by jacketing or encapsulating waste to prevent further spread or leakage of contaminating materials. Leaking drums may be contained within oversized barrels as an interim measure prior to removal and final disposal.

Pentachlorophenol (PCP): A synthetic, modified petrochemical that may be used as a wood preservative because of its toxicity to termites and fungi. It is a common component of creosotes and can cause cancer.

Perched (groundwater): Groundwater separated from another underlying body of groundwater by a confining layer, often clay or rock.

Percolation: The downward flow or filtering of water or other liquids through subsurface rock or soil layers, usually continuing downward to groundwater.

Pesticide: A substance or mixture of substances intended to prevent, destroy, or repel any pest. If misused, pesticides can accumulate in the foodchain and contaminate the environment.

Petrochemicals: Chemical substances produced from petroleum in refinery operations and as fuel oil residues. These include fluoranthene, chrysene, mineral spirits, and refined oils. Petrochemicals are the bases from which volatile organic compounds (VOCs), plastics, and many pesticides are made. These chemical substances often are toxic to humans and the environment.

Phenols: Organic compounds that are used in plastics manufacturing and are by-products of petroleum refining, tanning, textile, dye, and resin manufacturing. Phenols are highly poisonous.

Physical Chemical Separation: The treatment process of adding a chemical to a substance to separate the compounds for further treatment or disposal.

Pilot Testing: A small-scale test of a proposed treatment system in the field to determine its ability to clean up specific contaminants.

Plugging: The process of stopping the flow of water, oil, or gas into or out of the ground through a borehole or well penetrating the ground.

Plume: A body of contaminated groundwater flowing from a specific source. The movement of the groundwater is influenced by such factors as local groundwater flow patterns, the character of the aquifer in which groundwater is contained, and the density of contaminants [see Migration].

Pollution: Generally, the presence of matter or energy whose nature, location, or quantity produces undesired health or environmental effects.

GLOSSARY

Polycyclic Aromatic Hydrocarbons or Polyaromatic Hydrocarbons (PAHs):

PAHs, such as pyrene, are a group of highly reactive organic compounds found in motor oil. They are a common component of creosotes and can cause cancer.

Polychlorinated Biphenyls (PCBs): A group of toxic chemicals used for a variety of purposes including electrical applications, carbonless copy paper, adhesives, hydraulic fluids, microscope immersion oils, and caulking compounds. PCBs also are produced in certain combustion processes. PCBs are extremely persistent in the environment because they are very stable, non-reactive, and highly heat resistant. Chronic exposure to PCBs is believed to cause liver damage. It also is known to bioaccumulate in fatty tissues. PCB use and sale was banned in 1979 with the passage of the Toxic Substances Control Act.

Polynuclear Aromatic Hydrocarbons (PNAs): PNAs, such as naphthalene, and biphenyls, are a group of highly reactive organic compounds that are a common component of creosotes, which can be carcinogenic.

Polyvinyl Chloride (PVC): A plastic made from the gaseous substance vinyl chloride. PVC is used to make pipes, records, raincoats, and floor tiles. Health risks from high concentrations of vinyl chloride include liver cancer and lung cancer, as well as cancer of the lymphatic and nervous systems.

Potable Water: Water that is safe for drinking and cooking.

Potentially Responsible Parties (PRPs):

Parties associated with a Superfund site who may be liable for the cost of remedying the release of hazardous substances. This may include owners or operators of the site or transporters who disposed of materials at the site. PRPs may admit liability, or liability may be determined by a court of law. PRPs may sign a

Consent Decree or Administrative Order on Consent to participate in the site cleanup without admitting liability.

Precipitation: The removal of solids from liquid waste so that the solid and liquid portions can be disposed of safely; the removal of particles from airborne emissions. Electrochemical precipitation is the use of an anode or cathode to remove the hazardous chemicals. Chemical precipitation involves the addition of some substance to cause the solid portion to separate.

Preliminary Assessment: The process of collecting and reviewing available information about a known or suspected waste site or release to determine if a threat or potential threat exists.

Pump and Treat: A groundwater cleanup technique involving the extracting of contaminated groundwater from the subsurface and the removal of contaminants, using one of several treatment technologies.

Radionuclides: Elements, including radium and uranium-235 and -238, which break down and produce radioactive substances due to their unstable atomic structure. Some are man-made, and others are naturally occurring in the environment. Radon, the gaseous form of radium, decays to form alpha particle radiation, which cannot be absorbed through skin. However, it can be inhaled, which allows alpha particles to affect unprotected tissues directly and thus cause cancer. Radiation also occurs naturally through the breakdown of granite.

RCRA: [See Resource Conservation and Recovery Act].

Recharge Area: A land area where rainwater saturates the ground and soaks through the earth to reach an aquifer.

Record of Decision (ROD): A public document that explains which cleanup alternative(s) will be used to clean up sites listed on the NPL. It is based on information generated during the remedial investigation and feasibility study and consideration of public comments and community concerns.

Recovery Wells: Wells used to withdraw contaminants or contaminated groundwater.

Recycle: The process of minimizing waste generation by recovering usable products that might otherwise become waste.

Remedial Action (RA): The actual construction or implementation phase of a Superfund site cleanup following the remedial design [see Cleanup].

Remedial Design: A phase of site cleanup where engineers design the technical specifications for cleanup remedies and technologies.

Remedial Investigation: An in-depth study designed to gather the data necessary to determine the nature and extent of contamination at a Superfund site, establish the criteria for cleaning up the site, identify the preliminary alternatives for cleanup actions, and support the technical and cost analyses of the alternatives. The remedial investigation is usually done with the feasibility study. In this volume, the remedial investigation is referred to as a site study [see also Feasibility Study].

Remedial Project Manager (RPM): The EPA or State official responsible for overseeing cleanup actions at the site.

Remedy Selection: The selection of the final cleanup strategy for the site. At the few sites where the EPA has determined that initial response actions have eliminated site contamination, or that any remaining con-

tamination will be naturally dispersed without further cleanup activities, a "No Action" remedy is selected [see Record of Decision].

Removal Action: Short-term immediate actions taken to address releases of hazardous substances [see Cleanup].

Residual: The amount of a pollutant remaining in the environment after a natural or technological process has taken place, e.g., the sludge remaining after initial wastewater treatment, or the particulates remaining in air after the air passes through a scrubber.

Resource Conservation and Recovery Act (RCRA): A Federal law that established a regulatory system to track hazardous substances from the time of generation to disposal. The law requires safe and secure procedures to be used in treating, transporting, storing, and disposing of hazardous substances. RCRA is designed to prevent new, uncontrolled hazardous waste sites.

Retention Pond: A small body of liquid used for disposing of wastes and containing overflow from production facilities. Sometimes retention ponds are used to expand the capacity of such structures as lagoons the store waste.

Runoff: The discharge of water over land into surface water. It can carry pollutants from the air and land and spread contaminants from its source.

Scrubber: An air pollution control device that uses a spray of water or reactant or a dry process to trap pollutants in emissions.

Sediment: The layer of soil, sand, and minerals at the bottom of surface waters such as streams, lakes, and rivers, that absorbs contaminants.

GLOSSARY

Seeps: Specific points where releases of liquid, usually leachate, form from waste disposal areas, particularly along the lower edges of landfills.

Seepage Pits: A hole, shaft, or cavity in the ground used for the storage of liquids, usually in the form of leachate, from waste disposal areas. The liquid gradually leaves the pit by moving through the surrounding soil.

Septage: Residue remaining in a septic tank after the treatment process.

Sinkhole: A hollow depression in the land surface in which drainage collects; associated with underground caves and passages that facilitate the movement of liquids.

Site Characterization: The technical process used to evaluate the nature and extent of environmental contamination, which is necessary for choosing and designing cleanup measures and monitoring their effectiveness.

Site Inspection: The collection of information from a hazardous waste site to determine the extent and severity of hazards posed by the site. It follows, and is more extensive than, a preliminary assessment. The purpose is to gather information necessary to score the site, using the Hazard Ranking System, and to determine if the site presents an immediate threat that requires a prompt removal action.

Slag: The fused refuse or dross separated from a metal in the process of smelting.

Sludge: Semi-solid residues from industrial or water treatment processes that may be contaminated with hazardous materials.

Slurry Wall: Barriers used to contain the flow of contaminated groundwater or subsurface

liquids. Slurry walls are constructed by digging a trench around a contaminated area and filling the trench with an impermeable material that prevents water from passing through it. The groundwater or contaminated liquids trapped within the area surrounded by the slurry wall can be extracted and treated.

Smelter: A facility that melts or fuses ore, often with an accompanying chemical change, to separate the metal. Emissions from smelters are known to cause pollution.

Soil Gas: Gaseous elements and compounds that occur in the small spaces between particles of soil. Such gases can move through or leave the soil or rock, depending on changes in pressure.

Soil Vapor Extraction: A treatment process that uses vacuum wells to remove hazardous gases from soil.

Soil Washing: A water-based process for mechanically scrubbing soils in-place to remove undesirable materials. There are two approaches: dissolving or suspending them in the wash solution for later treatment by conventional methods, and concentrating them into a smaller volume of soil through simple particle size separation techniques [see Solvent Extraction].

Stabilization: The process of changing an active substance into inert, harmless material, or physical activities at a site that act to limit the further spread of contamination without actual reduction of toxicity.

Solidification/Stabilization: A chemical or physical reduction of the mobility of hazardous constituents. Mobility is reduced through the binding of hazardous constituents into a solid mass with low permeability and resistance to leaching.

Solvent: A substance capable of dissolving another substance to form a solution. The primary uses of industrial solvents are as cleaners for degreasing, in paints, and in pharmaceuticals. Many solvents are flammable and toxic to varying degrees.

Solvent Extraction: A means of separating hazardous contaminants from soils, sludges, and sediment, thereby reducing the volume of the hazardous waste that must be treated. It generally is used as one in a series of unit operations. An organic chemical is used to dissolve contaminants as opposed to water-based compounds, which usually are used in soil washing.

Sorption: The action of soaking up or attracting substances. It is used in many pollution control systems.

Special Notice Letter: [See Notice Letter].

Stillbottom: Residues left over from the process of recovering spent solvents.

Stripping: A process used to remove volatile contaminants from a substance [see Air Stripping].

Sumps: A pit or tank that catches liquid runoff for drainage or disposal.

Superfund: The program operated under the legislative authority of the CERCLA and Superfund Amendments and Reauthorization Act (SARA) to update and improve environmental laws. The program has the authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health, welfare, or the environment. The "Superfund" is a trust fund that finances cleanup actions at hazardous waste sites.

Surge Tanks: A holding structure used to absorb irregularities in flow of liquids, including liquid waste materials.

Swamp: A type of wetland that is dominated by woody vegetation and does not accumulate peat moss deposits. Swamps may be fresh or saltwater and tidal or non-tidal [see Wetlands].

Thermal Treatment: The use of heat to remove or destroy contaminants from soil.

Treatability Studies: Testing a treatment method on contaminated groundwater, soil, etc., to determine whether and how well the method will work.

Trichloroethylene (TCE): A stable, colorless liquid with a low boiling point. TCE has many industrial applications, including use as a solvent and as a metal degreasing agent. TCE may be toxic to people when inhaled, ingested, or through skin contact and can damage vital organs, especially the liver [see Volatile Organic Compounds].

Unilateral [Administrative] Order: [see Administrative Order].

Upgradient: An upward hydrologic slope; demarks areas that are higher than contaminated areas and, therefore, are not prone to contamination by the movement of polluted groundwater.

Vacuum Extraction: A technology used to remove volatile organic compounds (VOCs) from soils. Vacuum pumps are connected to a series of wells drilled to just above the water table. The wells are sealed tightly at the soil surface, and the vacuum established in the soil draws VOC-contaminated air from the soil pores into the well, as fresh air is drawn down from the surface of the soil.

GLOSSARY

Vegetated Soil Cap: A cap constructed with graded soils and seed for vegetative growth, to prevent erosion [see Cap].

Vitrification: The process of electrically melting wastes and soils or sludges to bind the waste in a glassy, solid material more durable than granite or marble and resistant to leaching.

Volatile Organic Compounds (VOCs): VOCs are manufactured as secondary petrochemicals. They include light alcohols, acetone, trichloroethylene, perchloroethylene, dichloroethylene, benzene, vinyl chloride, toluene, and methylene chloride. These potentially toxic chemicals are used as solvents, degreasers, paints, thinners, and fuels. Because of their volatile nature, they readily evaporate into the air, increasing the potential exposure to humans. Due to their low water solubility, environmental persistence, and widespread industrial use, they are commonly found in soil and groundwater.

Waste Treatment Plant: A facility that uses a series of tanks, screens, filters, and other treatment processes to remove pollutants from water.

Wastewater: The spent or used water from individual homes or industries.

Watershed: The land area that drains into a stream or other water body.

Water Table: The upper surface of the groundwater.

Weir: A barrier to divert water or other liquids.

Wetland: An area that is regularly saturated by surface or groundwater and, under normal circumstances, is capable of supporting vegetation typically adapted for life in saturated soil conditions. Wetlands are critical to sustaining many species of fish and wildlife. Wetlands generally include swamps, marshes, and bogs. Wetlands may be either coastal or inland. Coastal wetlands have salt or brackish (a mixture of salt and fresh) water, and most have tides, while inland wetlands are non-tidal and freshwater. Coastal wetlands are an integral component of estuaries.

Wildlife Refuge: An area designated for the protection of wild animals, within which hunting and fishing are either prohibited or strictly controlled.

Some Common Contaminants at NPL Sites

Contaminant Category	Example Chemical Types	Sources	Potential Health Threats*
Heavy Metals	Arsenic, Barium, Beryllium, Cadmium, Cobalt, Copper, Chromium, Lead, Manganese, Mercury, Nickel, Silver, Selenium, Zinc	Electroplating, batteries, paint pigments, photography, smelting, thermometers, fluorescent lights, solvent recovery	Tumors, cancers, and kidney, brain, neurological, bone and liver damage
Volatile Organic Compounds (VOCs)	Trichloroethylene (TCE), Perchloroethylene (PCE), Acetone, Benzene, Ketone, Methyl chloride, Toluene, Vinyl Chloride, Dichloroethylene	Solvents and degreasers, gasoline octane enhancers, oils and paints, dry cleaning fluids, chemical manufacturing.	Cancers, kidney and liver damage, impairment of the nervous system resulting in sleepiness and headaches, leukemia
Pesticides/Herbicides	Chlordane, DDT 4-4, DDE, Heptachlor, Aldrin, Endrin, Atrazine, Dieldrin, Toxaphene	Agricultural applications, pesticide and herbicide production	Various effects ranging from nausea to nervous disorders. Dioxin is a common by-product of the manufacture of pesticides and is both highly toxic and a suspected carcinogen.
Polychlorinated biphenyls (PCBs)	—	Electric transformers and capacitors, insulators and coolants, adhesives, caulking compounds, carbonless copy paper, hydraulic fluids.	Cancer and liver damage.
Creosotes	Polyaromatic hydrocarbons (PAHs), Polynuclear aromatics (PNAs), Phenolic Tars, Pentachlorophenol (PCP)	Wood preserving, fossil fuel combustion	Cancers and skin ulcerations with prolonged exposure
Radiation (Radionuclides)	Radium-226, Radon, Uranium-235, Uranium-238	Mine tailings, radium products, natural decay of granites	Cancer

Sources: *Toxic Chemicals—What They Are, How They Affect You (EPA, Region 5)*
Glossary of Environmental Terms (EPA, 1988)

*The potential for risk due to these contaminants is linked to a number of factors; for example, the length and level of exposure and environmental and health factors such as age.